PIXMA MP600 / MP600R

SERVICE MANUAL

Canon

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I. MANUAL OUTLINE

This manual consists of the following three parts to provide information necessary to service the PIXMA MP600:

Part 1: Maintenance

Information on maintenance and troubleshooting of the PIXMA MP600

Part 2: Technical Reference

New technology and technical information such as FAQ's (Frequently Asked Questions) of the PIXMA MP600

Part 3: Appendix

Block diagrams and pin layouts of the PIXMA MP600

Reference

This manual does not provide sufficient information for disassembly and reassembly procedures.
Refer to the graphics in the separate Parts Catalog.

II. TABLE OF CONTENTS

Part 1: MAINTENANCE

1. MAINTENANCE
   - 1-1. Adjustment, Periodic Maintenance, Periodic Replacement Parts, and Replacement Consumables by Service Engineer
   - 1-2. Customer Maintenance
   - 1-3. Product Life
   - 1-4. Special Tools
   - 1-5. Serial Number Location
2. LIST OF ERROR DISPLAY / INDICATION
   - 2-1. Operator Call Errors
   - 2-2. Service Call Errors
   - 2-3. Other Error Messages
   - 2-4. Warnings
   - 2-5. Troubleshooting by Symptom
3. REPAIR
   - 3-1. Notes on Service Part Replacement
   - 3-2. Special Notes on Repair Servicing
   - 3-3. Adjustment / Settings
     - (1) Paper feed motor adjustment
     - (2) Grease application
     - (3) Ink absorber counter setting
     - (4) User mode
     - (5) Service mode
       - A: Service test print, EEPROM initialization, Ink absorber counter resetting
       - B: Destination settings
       - C: LF / Eject correction
       - D: Left margin correction
       - E: Ink absorber counter setting
       - F: Button and LCD test
   - 3-4. Verification Items
     - (1) Service test print
     - (2) EEPROM information print
4. MACHINE TRANSPORTATION

Part 2: TECHNICAL REFERENCE

1. NEW TECHNOLOGIES
2. CLEANING MODE AND AMOUNT OF INK PURGED
3. PRINT MODE
4. FAQ (Problems Specific to the MP600 and Corrective Actions)

Part 3: APPENDIX

1. BLOCK DIAGRAM
2. CONNECTOR LOCATION AND PIN LAYOUT
    2-1. Logic Board
    2-2. Carriage Board (Print Head Connector)
    2-3. Print Beam / PictBridge Board
    2-4. Card Slot Board (Card Slot Unit)
    2-5. Operation Panel Board
3. PIXMA MP600 SPECIFICATIONS
4. PRINT MEDIA SPECIFICATIONS

<II. TABLE OF CONTENTS>

Part 1

MAINTENANCE

1. MAINTENANCE

1-1. Adjustment, Periodic Maintenance, Periodic Replacement Parts, and Replacement Consumables by Service Engineer

(1) Adjustment

	Adjustment	Timing	Purpose	Tool	Approx. time
	Destination settings (EEPROM settings)	- At logic board replacement	To set destination.	None. Perform in the service mode.	1 min.
	EEPROM initialization	- At logic board replacement	To initialize settings	None. Perform in the service mode.	1 min.
	Ink absorber counter resetting (EEPROM settings)	- At logic board replacement - At ink absorber replacement	To reset the ink absorber counter.	None. Perform in the service mode.	1 min.
	Ink absorber counter value setting (EEPROM settings)	- At logic board replacement	To set the ink amount data in the ink absorber to the ink absorber counter.	None. Perform in the service mode.	1 min.
	Paper feed motor position adjustment	- At paper feed motor replacement	To adjust the belt tension. (Position the paper feed motor so that the belt is stretched tight.)	None.	2 min.
	Print head alignment	- At print head replacement - At logic board replacement - When print quality is not satisfying	To secure the dot placement accuracy.	- Computer (MP driver) - Machine button	Manual: 5 min. Auto: 4 min.
New	LF / Eject correction	- At logic board replacement - At feed roller ass'y replacement - At platen unit replacement	LF correction: To correct line feeding Eject correction: To adjust eject rollers and maintain the paper eject accuracy using the eject encoder for the trailing edge of paper	None. Perform in the service mode.	5 min.
	Grease application	- At carriage unit replacement - At PR shaft ass'y replacement - At CL base or CL gear replacement	To maintain sliding properties of the following items: - Carriage shaft - Lift cam bushing - Machine sliding portions (gears)	FLOIL KG-107A	1 min.
	Ink system function check	- At logic board replacement - At platen unit replacement - At carriage unit replacement	To maintain detection functionality for presence of the ink tanks and each ink tank position.	None. Perform in the service mode.	1 min.
	LCD language settings	- At logic board replacement	To set the language to be displayed on the LCD.	None. Perform in the user mode.	1 min.

	Document pressure sheet position adjustment	- At document pressure sheet replacement	To adjust the pressure sheet to fit in place to the four corners of the platen glass when the cover is closed.	None.	1 min.

Caution: DO NOT loosen the red screws at both ends of the carriage shaft, securing the print head position, as they are not re-adjustable.
The red screws securing the paper feed motor may be loosened only at replacement of the paper feed motor unit..

(2) Periodic maintenance

No periodic maintenance is necessary.

(3) Periodic replacement parts

There are no parts in this machine that require periodic replacement by a service engineer.

(4) Replacement consumables

There are no consumables that require replacement by a service engineer.

1-2. Customer Maintenance

Adjustment	Timing	Purpose	Tool	Approx. time
Print head alignment	At print head replacement	To ensure accurate dot placement.	- Machine buttons- Computer (automatic alignment via MP driver)	4 min.
Print head cleaning	When print quality is not satisfying.	To improve nozzle conditions.	- Machine buttons- Computer (MP driver)	1 min.
Print head deep cleaning	When print quality is not satisfying, and not improved by print head cleaning.	To improve nozzle conditions.	- Machine buttons- Computer (MP driver)	2 min.
Ink tank replacement	When an ink tank becomes empty. ("No ink error" displayed on the monitor or on the machine LCD, or short flashing of an ink tank LED)	—	—	2 min.
Paper feed roller cleaning	When paper does not feed properly.	To clean the paper feed rollers.	- Machine buttons	2 min.
Bottom plate cleaning	When the back side of the paper is smeared.	To clean the platen ribs.	- Plain paper- Computer (MP driver)- Machine buttons	1 min.
ASF sub- roller cleaning	When the paper fed from the ASF is smeared due to ink mist attached to the ASF sub-rollers.	To clean the ASF sub-rollers.	- Plain paper- Machine buttons See Part 2, 4. FAQ, How to make and set the ASF sub-roller cleaning sheet, for details.	1 min.
Scanning area cleaning	When the platen glass is dirty.	To clean the platen glass.	None.	1 min.

1-3. Product Life

(1) Machine

Specified print volume (I) or the years of use (II), whichever comes first.

(I) Print volume: 24,000 pages

Black	1500 character pattern	11,000 pages
Color	7.5% duty per color pattern	7,200 pages
	A4, photo, borderless printing	500 pages
	4 x 6, photo, borderless printing	4,300 pages
	Postcard, photo, borderless printing	1,000 pages

(II) Years of use: 5 years of use

(2) Print head

Print volume: 33,600 pages

(3) Ink tank (target value)

Average yield ( ): Estimated supplemental yield	**PGI-5BK**	**CLI-8BK**	**CLI-8C**	**CLI-8M**	**CLI-8Y**
Color document (ISO/IEC FCD24712)*1	520 pages	(5,220) pages	890 pages	670 pages	700 pages
Photo (4" x 6")*2	(3,095) pages	(1,305) pages	387 pages	271 pages	291 pages

*1: Declared yield value in accordance with ISO/IEC FCD24711. Values obtained by continuous printing.

*2: When printing Canon standard patterns on 4" x 6" Photo Paper Plus Glossy continuously with the default settings of Photo Paper Plus Glossy using Windows XP printer driver in borderless printing mode and Windows XP Photo Printing Wizard. Declared yield value determined based on Canon standard method referring to ISO/IEC FCD24712.

Note: Ink yield may vary depending on texts/photos printed, applications software used, print mode and type of paper used.

1-4. Special Tools

Name	**Tool No.**	**Price (JPY)**	**Application**	**Remarks**
FLOIL KG-107A	QY9-0057-000	210	To the carriage shaft sliding portions, and lift cam bushing	In common with the S520.

1-5. Serial Number Location

On the carriage flexible cable holder (visible on the left of the carriage: open the scanning unit after turning off the machine.)

2. LIST OF ERROR DISPLAY / INDICATION

Errors and warnings are displayed by the following ways:

1) Operator call errors are indicated by the Alarm LED lit in orange, and the error and its solution are displayed on the LCD in text and by icon.
2) Messages during printing from a computer are displayed on the MP driver Status Monitor.
3) Error codes are printed in the "operator call/service call error record" area in EEPROM information print.

Buttons valid when an operator call error occurs:

1) ON/OFF button: To turn the machine off and on again.
2) OK button: To clear and recover from an error. In some operator call errors, the error will automatically be cleared when the cause of the error is eliminated, and pressing the OK button may not be necessary.
3) Stop/Reset button: To cancel the job at error occurrence, and to clear the error.

2-1. Operator Call Errors (by Alarm LED Lit in Orange)

Error [Error code]	U No.	Message on the LCD	Solution	Remarks
No paper in the ASF. [1000]	---	Auto sheet feeder. There is no paper. Load paper and press [OK].	Set the paper in the ASF, and press the OK button.	
No paper in the front paper feed cassette. [1003]	---	Cassette. There is no paper. Load paper and press [OK].	Set the paper in the cassette, and press the OK button.	
Paper jam. [1300]	---	Paper output slot / Rear cover / Duplex transport unit. The paper is jammed. Clear the paper and press [OK].	Remove the jammed paper, and press the OK button.	Error during paper feeding from the ASF
Paper jam in the rear guide. [1303]	---			Error in the duplexing transport unit
Paper jam in the under guide. [1304]	---			Error during paper feeding from the cassette
Ink may have run out. [1600]	U041	(Applicable ink tank icon) The following ink may have run out. Replacing the ink tank is recommended.	Replace the applicable ink tank, or press the OK button to clear the error without ink tank replacement.	When the error is cleared by pressing the OK button, ink may run out during printing.
Ink tank not installed. [1660]	U043	(Applicable ink tank icon) The following ink tank cannot be recognized.	Install the applicable ink tank(s) properly, and confirm that the LED's of all the ink tanks light red.	
- Print head not installed, or not properly installed. [1401] - Print head temperature sensor error. [1403]	U051	Print head is not installed. Install the print head.	Install the print head properly.	
	U052	The type of print head is		

- Faulty EEPROM data of the print head. [1405] - Print head hardware error. [1682]		incorrect. Install the correct print head.		
Inner cover open. [1841]	---	Inner cover is open. Close the inner cover and press [OK].	Close the inner cover, and press the OK button.	
Inner cover open during printing on paper. [1846]	---		Close the inner cover, and press the OK button.	
Multiple ink tanks of the same color installed. [1681]	U071	(Applicable ink tank icon) More than one ink tank of the following color is installed.	Replace the wrong ink tank(s) with the correct one(s).	
Ink tank in a wrong position. [1680]	U072	Some ink tanks are not installed in place.	Install the ink tank(s) in the correct position.	
Warning: The ink absorber becomes almost full. [1700, 1701 (Japan)]	---	Contact the support center or service center for ink absorber replacement. Press [OK] to continue printing.	Press the OK button.	The service call error, indicating the ink absorber is full, is likely to occur soon.
The connected digital camera or digital video camera does not support Camera Direct Printing. [2001]	---	The device may be incompatible. Remove the device and check the manual supplied with the connected device.	Remove the cable between the camera and the machine.	
Automatic duplex printing cannot be performed. [1310]	---	This paper is not compatible with duplex printing. Remove the paper and press [OK].	Press the OK button to eject the paper being used at error occurrence. Printing will resume from on the front side of the next page.	Data which was to be printed on the back side of paper at error occurrence is skipped (not printed).
Failed in automatic print head alignment. [2500]	---	Auto head align has failed. Press [OK] and repeat operation. <See manual>	Press the OK button. - If paper is being fed at error occurrence, the error is indicated after the paper is ejected. - If the error occurs, the print head alignment values are not changed. - After exit from the error by the OK	The error will occur (a) when the print head alignment pattern is not printed due to no ink or non-ejection of ink, (b) when the sensor's AD value is incorrect, or (c) when the paper is shorter than the specified length.

			button, the automatic print head alignment will not be re-done.	
The remaining ink amount unknown. [1683]	U130	(Applicable ink tank icon) The remaining level of the following ink cannot be correctly detected. Replace the ink tank.	An ink tank which has once been empty is installed. Replace the applicable ink tank with a new one. Printing with a once-empty ink tank can damage the printer. To continue printing without replacing the ink tank(s), press the Stop/Reset button for 5 sec. or longer to disable the function to detect the remaining ink amount. After the operation, it is recorded in the printer EEPROM that the function to detect the remaining ink amount was disabled.	The error is indicated when raw ink is detected but the dot count number exceeds the threshold of complete exhaustion of ink.
Ink tank not recognized. [1684]	U140	(Applicable ink tank icon) The following ink tank cannot be recognized.	A non-supported ink tank is installed (the ink tank LED is turned off). Install the supported ink tanks.	
Ink tank not recognized. [1410 to 1419]	U150	The following ink tank cannot be recognized. (Applicable ink tank icon)	A hardware error occurred in an ink tank (the ink tank LED is turned off). Replace the ink tank(s). Each error code corresponds to each ink tank, from left (the opposite side of the home position) to right, respectively.	Ink tank positioning (from left to right): BK, PigBK, Y, M, C
No ink. [1688]	U163	(Applicable ink tank icon) The following ink has run out. Replace the ink tank.	Replace the empty ink tank(s), and close the scanning unit (printer cover). Printing with an empty ink tank can damage the printer. To continue printing without replacing the ink tank(s), press the Stop/Reset button for 5 sec. or longer to disable the function to detect the remaining ink amount. After the operation, it is recorded in the printer that the function to detect the remaining ink amount was disabled.	The error is indicated when "no raw ink" is detected and when the dot count number exceeds the threshold of complete exhaustion of ink.
Scanning unit (printer cover) open. [1200]	---	Cover is open. Close cover.	Close the scanning unit (printer cover).	Printing stops because the scanning unit (printer cover) is open.

<1-2-1. Operator Call Errors>

2-2. Service Call Errors (by Cyclic Blinking in Orange (Alarm LED) and Green (COPY button), or Alarm LED Lit in Orange)

Service call errors are indicated by the number of cycles the Alarm LED and COPY button blink, and the corresponding error code is displayed on the LCD.

Cycles of blinking in orange (Alarm LED) and green (COPY button)	Error	Conditions	Solution (Replacement of listed parts, which are likely to be faulty)
2 times	Carriage error [5100]	An error occurred in the carriage encoder signal.	- Carriage unit (QM2-3936) - Timing slit strip film (QC1-6526) - Logic board ass'y (QM3-0250)*1 - Carriage motor (QK1-1500)
3 times	Line feed error [6000]	An error occurred in the LF encoder signal.	- Timing sensor unit (QM3-1271) - Timing slit disk film (QC2-0475) - Feed roller ass'y (QL2-1490) - Logic board ass'y (QM3-0250)*1 - Paper feed motor (QK1-1502)
4 times	Purge cam sensor error [5C00]	An error occurred in the purge unit.	- Purge unit (QM3-0033) - Logic board ass'y (QM3-0250)*1
5 times	ASF (cam) sensor error [5700]	This error takes place when feeding paper from the ASF after an error occurred in the ASF cam sensor.	- Sheet feed unit (QM3-0064)
6 times	Internal temperature error [5400]	The internal temperature is not normal.	- Logic board ass'y (QM3-0250)*1 - Carriage unit (QM2-3936)
7 times	Ink absorber full [5B00, 5B01 (Japan)]	The ink absorber is supposed to be full.Message on the LCD: Ink absorber full. Service required.	- Ink absorber kit (QY5-0181)
8 times	Print head temperature rise error [5200]	The print head temperature exceeded the specified value.	- Print head (QY6-0061) - Logic board ass'y (QM3-0250)*1
9 times	EEPROM / NVRAM error [6800]	A problem occurred in writing to the EEPROM.	- Logic board ass'y (QM3-0250)*1
10 times	VH monitor error [B200]	The VH output is not normal.	- Print head (QY6-0061) - Logic board ass'y (QM3-0250)*1
11 times	Carriage lift mechanism error [5110]	The carriage did not move up or down properly.	- PR lift shaft ass'y (QL2-1450) - Sheet feed unit (QM3-0064) - Logic board ass'y (QM3-0250)*1 - Carriage lift sensor unit (QM3-1273)
12 times	AP position error [6A00]	An error occurred in the AP motor during purging operation.	- Sheet feed unit (QM3-0064) - Logic board ass'y (QM3-0250)*1 - Purge unit (QM3-0033)
13 times	Paper feed position error [6B00]	An error occurred in the paper feed motor.	- Sheet feed unit (QM3-0064) - Logic board ass'y (QM3-0250)*1
14 times	Paper feed cam sensor error [6B10]	An error occurred in the paper feed cam sensor during paper feeding from the front paper feed cassette. This error is also indicated when the ink absorber counter value is 60% or more, and a paper jam occurs in the under guide.	- Sheet feed unit (QM3-0064) - Logic board ass'y (QM3-0250)*1

15 times	USB Host VBUS overcurrent [9000]	The USB Host VBUS is overloaded.	- Logic board ass'y (QM3-0250)*1
16 times	Pump roller sensor error [5C20]	The pump roller position cannot be detected.	- Logic board ass'y (QM3-0250) *1 - Purge unit (QM3-0033)
17 times	Paper eject encoder error [6010]	An error occurred in the paper eject encoder signal.	- Logic board ass'y (QM3-0250) *1 - Platen unit (QM3-1794)
19 times	Ink tank position sensor error [6502]	None of the ink tank position is detected.	- Platen unit (QM3-1794) - Logic board ass'y (QM3-0250)*1
20 times	Other hardware error [6500]	The PCI bus error is detected by the ASIC.	- Logic board ass'y (QM3-0250)*1
22 times	Scanner home position error [5010]	The scanner unit cannot detect the home position, or the scanner unit warming-up is not performed properly at power-on. On the LCD, "Scanner is not operating correctly." is displayed.	- Scanner unit (QM2-3940)
Power LED turned off, and Alarm LED lit	ROM error	The check sum value is incorrect in the ROM check at hard-power-on.	- Logic board ass'y (QM3-0250)*1
Power LED turned off, and Alarm LED lit	RAM error	The RAM error occurred in the RAM check at hard-power-on.	- Logic board ass'y (QM3-0250)*1

*1: Before replacement of the logic board ass'y, check the ink absorber counter value (by service test print or EEPROM information print). If the counter value is 7% or more, also replace the ink absorber kit (QY5-0181) when replacing the logic board ass'y.
[See 3-3. Adjustment / Settings, (5) Service mode, for details.]

<1-2-2. Service Call Errors>

2-3. Other Error Messages

Message on the LCD	Cause	Solution
The selected paper cannot be fed from cassette. Change the paper source and press [OK].	The paper type being used (business card, Credit Card size paper, or stickers, etc.) is not supported for paper feeding from the cassette.	Change the paper source to the ASF.
Device memory is full. Reduce the amount of photos, films, copies to scan.	The memory is not sufficient to do the print job.	Reduce the amount of data to be printed, or print from a computer.
Failed to scan. Either document cannot be scanned or is not placed on the platen glass.	The machine failed in scanning the document for Fit-to-page copy.	Press the OK button to clear the error. The LCD automatically returns to the display before the error occurrence.
Press <>. (<>: Color button icon)	The Black button was pressed, but it is invalid.	A temporary error. Press the Color button to continue the operation.
Press <>. (<>: Black button icon)	The Color button was pressed, but it is invalid.	A temporary error. Press the Black button to continue the operation.
There are no photos in memory card.	Supported image files are not in the memory card.	A temporary error.
The value exceeds the number of copies you can print.	During selecting images or specifying the number of copies, the total print quantity exceeds the prescribed value of 999.	A temporary error. The last operation before the error is cancelled, and the total print quantity returns to the value before the error.
Memory card is not set. Insert the card after checking the direction.	No memory card is inserted in the slot.	Set a memory card.
DPOF information is not saved in the memory card.	DPOF print was selected in the menu, but no DPOF files are contained in the memory card.	A temporary error. The LCD automatically returns to the display before the error occurrence.
This layout is available only for A4 or 8.5"x11"(215x279).	In Layout print, "Mixed 1, 2, or 3" which is available only with A4 or Letter size paper is selected, but the paper size is not set to A4 or Letter.	A temporary error. The LCD automatically returns to the display before the error occurrence.
Change the setting after removing the card.	With a memory card inserted in the slot, change of the Read/Write attribute was attempted.	A temporary error. The LCD automatically returns to the display before the error occurrence.
The card is currently write-enabled. Set to read-only mode before performing operation.	With the memory card set to the Read/write mode, Card Direct printing operation was attempted from the menu.	A temporary error. The LCD automatically returns to the display before the error occurrence.
The paper size is not correct. Check the page size you have set.	Non-supported size of paper for Camera Direct printing is selected.	Cancel printing on the digital camera.
Failed to scan handwriting sheet. Check for missed and improper markings.	The machine failed in scanning the handwritten Photo Index Sheet.	Press the OK button to clear the error. The LCD automatically returns to the display before the error occurrence.
Failed to scan handwriting sheet. Check orientation and position, and make sure platen and sheet are clean. <See manual>	The machine failed in scanning the handwritten Photo Index Sheet.	Press the OK button to clear the error. The LCD automatically returns to the display before the error occurrence.
Failed to scan Photo Index Sheet. Check for missed and improper markings.	The machine failed in scanning the Photo Index Sheet.	Press the OK button to clear the error. The LCD automatically returns to the display before the error occurrence.
Failed to scan Photo Index Sheet. Check the orientation, position and marking. <See manual>	The machine failed in scanning the Photo Index Sheet.	Press the OK button to clear the error. The LCD automatically returns to the display before the error occurrence.

2-4. Warnings

Warning	Message on the LCD	Solution
Low ink	The following ink is low. Continue? (Icon of each ink tank) Yes No	- Select **Yes**, and press the OK button. => Printing starts, and it is indicated on the LCD. - Select **No**, and press the OK button. => Printing is cancelled, and the LCD returns to the display immediately before printing was attempted.
	In Camera Direct Printing, only "Yes" can be selected.	
Print head temperature rise	If the print head temperature does not fall, the error code "5200" is displayed, indicating the print head temperature rise error.	When the print head temperature falls, the error is automatically cleared. Note: If the print head temperature exceeds the specified limit when the scanning unit (printer cover) is opened, the carriage does not move to the ink tank replacement position.
Protection of excess rise of the print head temperature	If the print head temperature does not fall, the error code "5200" is displayed, indicating the print head temperature rise error.	If the print head temperature exceeds the specified limit, an intermission is inserted during printing.
Restrictions on paper	The current paper cannot be set. Change the size and type.	Re-select the supported paper type and size.
Recommendation of the print head alignment (only on arrival of the machine)	Head alignment required. Load paper and press [OK]. Yes No	- Select **Yes**, and press the OK button. => Automatic print head alignment is performed. - Select **No**, and press the OK button. => The procedures on arrival of the machine are finished.
USB cable not connected	Connect USB cable and turn on the PC.	Connect the USB cable.
Cancellation of image select information	Reset the selected photo information? Yes	When one or more images are selected in Multi-photo print or Layout print, and if a user tries to display the menu or sub-menu, the message is displayed. - Select **Yes**, and press the OK button. => The image selection is cancelled, and the menu or sub-menu is displayed.

<1-2-4. Warnings>

2-5. Troubleshooting by Symptom

	Symptom	Solution
Faulty operation	The power does not turn on. The power turns off immediately after power-on.	- Confirm the connection of - the power cord, and - between the logic board and the power supply unit. - Replace the - AC adapter, or - logic board*1.
	A strange noise occurs.	- Remove foreign material. - Attach a removed part if any. - Check the operation of the moving parts (such as purge unit, carriage unit, and paper feeding mechanism) - Replace a faulty part, if any.
	Nothing is displayed on the LCD.	- Confirm the connection between the operation panel, the scanning unit, and the logic board. - Replace the - LCD, or - logic board*1.
	A portion of the LCD is not displayed.	- Perform the button and LCD test in the service mode, and confirm that the LCD is displayed without any segments missing. - Confirm the connection between the operation panel, the scanning unit, and the logic board. - Replace the - LCD, or - logic board*1.
	Paper feed problems (multi-feeding, skewed feeding, no feeding).	- Examine the inside to confirm that no parts are damaged, and the rollers are clean. - Remove foreign material. - Adjust the paper guide properly. - Confirm the connection of each harness and the logic board. - Replace the - sheet feeder unit, - cassette, or - logic board*1.
	Carriage movement problems (contact to other parts, strange noise).	- Confirm that the timing slit strip film is free from damage or grease. - Clean the timing slit strip film. - Replace the - timing slit strip film, or - carriage unit. - Remove foreign material.
	Faulty scanning (no scanning, strange noise).	- Confirm the connection between the scanning unit and the logic board. - Replace the - scanning unit, or - logic board*1.
Unsatisfactory print quality	No printing, or no color ejected.	- Replace the - ink tank, - print head*2, or

		- logic board[*1]. - Remove foreign material from the purge unit caps, if any. - Replace the purge unit.
	Printing is faint, or white lines appear on printouts even after print head cleaning. Line(s) not included in the print data appears on printouts.	- Remove and re-install the print head. - Replace the - ink tank, - print head[*2], - purge unit, or - logic board[*1].
	Paper gets smeared.	- Feed several sheets of paper. - Perform bottom plate cleaning. - Clean the paper path with cotton swab or cloth. - Clean the ASF sub-rollers.
	A part of a line is missing on printouts.	- Replace the - ink tank, or - print head[*2]. - Perform print head alignment.
	Color hue is incorrect.	- Replace the - ink tank, or - print head[*2]. - Perform print head alignment.
	Printing is incorrect.	Replace the logic board[*1].
	No ejection of black ink.	- Replace the - ink tank, or - print head[*2]. - Remove foreign material from the purge unit caps, if any. - Replace the purge unit.
	Graphic or text is enlarged on printouts.	**When enlarged in the carriage movement direction:** - Clean grease or oil off the timing slit strip film - Replace the - timing slit strip film, - carriage unit, or - logic board[*1]. **When enlarged in the paper feed direction:** - Clean grease or oil off the timing slit disk film - Replace the - timing slit disk film, - timing sensor unit, or - logic board[*1].
Faulty scanning	No scanning.	- Confirm the connection between the scanning unit and the logic board. - Replace the - scanning unit, or - logic board[*1].
	Streaks or smears on the scanned image.	- Clean the platen glass and the ADF. - Confirm the connection between the scanning unit and the logic board. - Replace the - scanning unit, - logic board[*1].

*1: Before replacement of the logic board ass'y, check the ink absorber counter value (by service test print or EEPROM information print). If the counter value is 7% or more, also replace the ink absorber kit (QY5-0181) when replacing the logic board ass'y.
[See 3-3. Adjustment / Settings, (5) Service mode, for details.]

*2: Replace the print head only after the print head deep cleaning is performed 2 times, and when the problem persists.

<1-2-5. Troubleshooting by Symptom>

3. REPAIR

3-1. Notes on Service Part Replacement (and Disassembling / Reassembling)

Service part	Notes on replacement*1	Adjustment / settings	Operation check
Logic board ass'y QM3-0250	- Before removal of the logic board ass'y, remove the power cord, and allow for approx. 1 minute (for discharge of capacitor's accumulated charges), to prevent damages to the logic board ass'y. - Before replacement, check the ink absorber counter value (by service test print or EEPROM information print). If the value is 7% or more, also replace the ink absorber kit (QY5-0181) when replacing the logic board ass'y. [See 3-3. Adjustment / Settings, (5) Service mode, for details.]	**After replacement:** 1. Initialize the EEPROM. 2. Reset the ink absorber counter. 3. Set the destination in the EEPROM. 4. Correct the CD / DVD and automatic print head alignment sensors. 5. Check the ink system function. [See 3-3. Adjustment / Settings, (5) Service mode, for details of 1 to 5.] 6. Perform the print head alignment in the user mode.	- EEPROM information print - Service test print - Printing via USB connection - Direct printing from a digital camera
Ink absorber kit QY5-0181		**After replacement:** 1. Reset the ink absorber counter. [See 3-3. Adjustment / Settings, (5) Service mode, for details.]	- Service test print - EEPROM information print
Carriage unit QM2-3936		**At replacement:** 1. Apply grease to the sliding portions. [See 3-3. Adjustment / Settings, (2) Grease application.] **After replacement:** 1. Correct the automatic print head alignment sensors. [See 3-3. Adjustment / Settings, (5) Service mode, for details.] 2. Check the ink system function. [See 3-3. Adjustment / Settings, (5) Service mode, for details.] 3. Perform the print head alignment in the user mode.	- Service test print (Confirm automatic print head alignment sensor correction, and ink system function.)
Paper feed motor QK1-1502	- The red screws securing the paper feed motor are allowed to be loosened. (DO NOT loosen any other red screws.)	**At replacement:** 1. Adjust the paper feed motor. [See 3-3. Adjustment / Settings, (1) Paper feed motor adjustment.]	
Platen unit QM3-1794		**After replacement:** 1. Check the ink system function. [See 3-3. Adjustment / Settings, (5) Service mode, for details.]	- Service test print
PR lift shaft ass'y QL2-1450 Input carriage lift gear QC2-1873		**At replacement:** 1. Apply grease to the sliding portions. [See 3.3. Adjustment / Settings, (2) Grease application.]	- Service test print
Timing slit strip film QC1-6526	- Upon contact with the film, wipe the film with ethanol.	**After replacement:** 1. Perform the print head	- Service test print

Timing slit disk eject film QC2-0476 Timing slit disk film QC2-0475	- Confirm no grease is on the film. (Wipe off any grease thoroughly with ethanol.) - Do not bend the film	alignment in the user mode.	
Print head QY6-0061		**After replacement:** 1. Perform the print head alignment in the user mode.	- Service test print

*1: General notes:

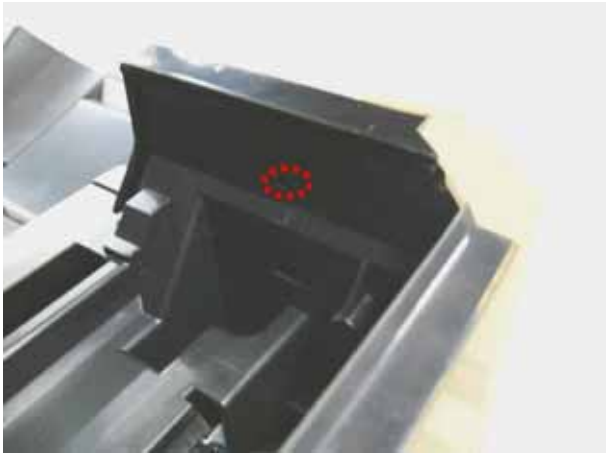
- Make sure that the flexible cables and wires in the harness are in the proper position and connected correctly.
  [See 3-2. Special Notes on Repair Servicing, (5) Flexible cable and harness wiring, connection, for details.]
- Do not drop the ferrite core, which may cause damage.
- Protect electrical parts from damage due to static electricity.
- Before removing a unit, after removing the power cord, allow the machine to sit for approx. 1 minute (for capacitor discharging to protect the logic board ass'y from damages).
- Do not touch the timing slit strip film, timing slit disk film, and timing slit disk eject film. No grease or abrasion is allowed.
- Protect the units from soiled with ink.
- Protect the housing from scratches.
- Exercise caution with the red screws, as follows:
  i. The red screws of the paper feed motor may be loosened only at replacement of the paper feed motor unit (DO NOT loosen them in other cases).
  ii. DO NOT loosen the red screws on both sides of the main chassis, securing the carriage shaft positioning (they are not adjustable in servicing)

<1-3-1. Notes on Service Part Replacement>

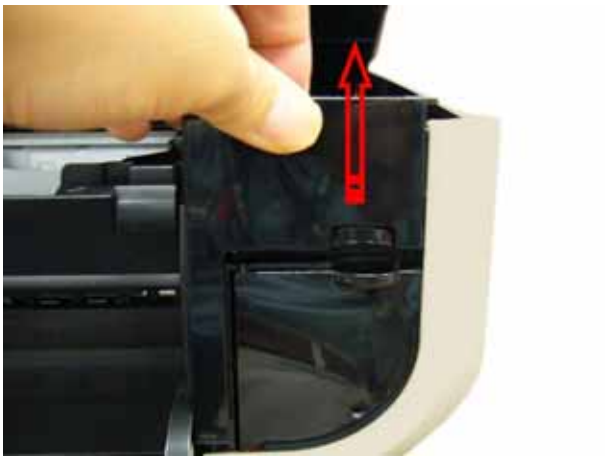
3-2. Special Notes on Repair Servicing

(1) External cover and scanner unit removal

(i) Front cover L removal
Insert a flat-blade screwdriver in the location indicated by the red circle, and release the front cover L while pushing it upward using the screwdriver.



(ii) Front cover R removal
Insert the flat-blade screwdriver in the location indicated by the red circle, and release the front cover R in the same way as step (i).

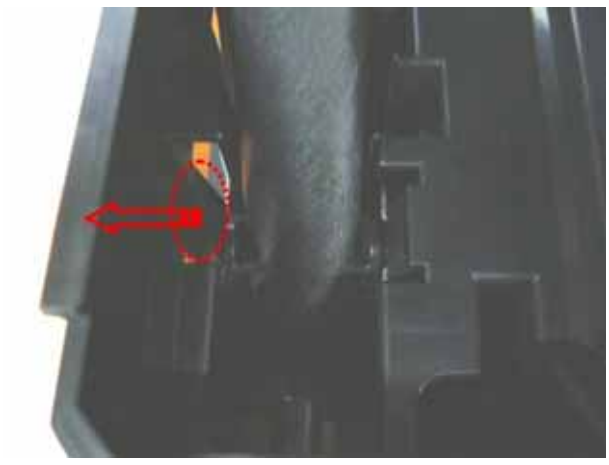


(iii) Remove 4 screws from the back of the machine, and 2 screws from the top back.

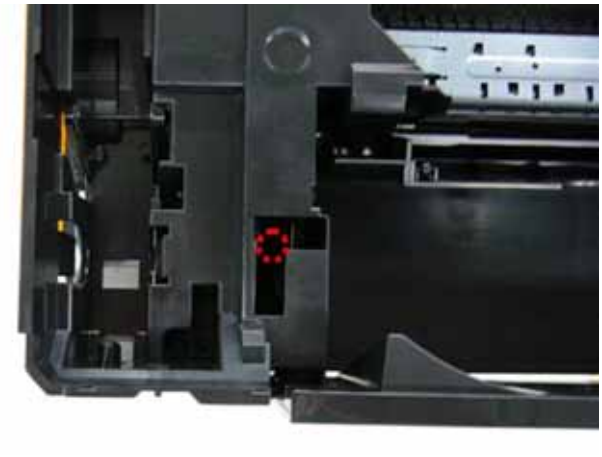
(iv) Remove 2 screws from the front of the machine (1 each on the right and left sides).

(v) Remove the side covers L and R.

(vi) Scanner lock arm unit removal
Push the main case tab outward to unlock the unit.
When assembling the scanner lock arm unit, make sure that the unit is in the correct orientation.



(vii) Main case removal Remove screws from the right and left sides of the paper ejection side.



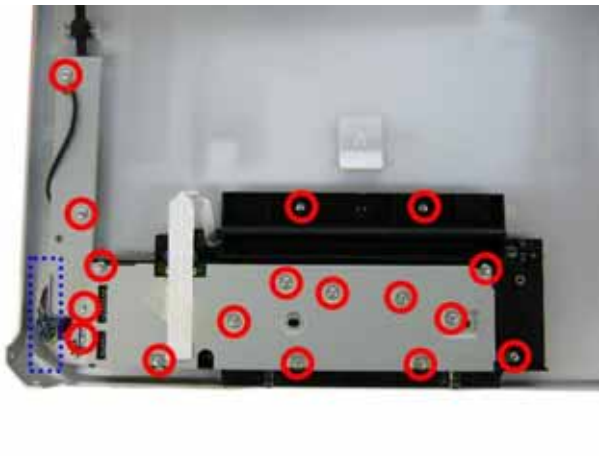
Remove screws from the right and left sides of the sheet feeder side.

(2) Operation panel and LCD viewer unit removal

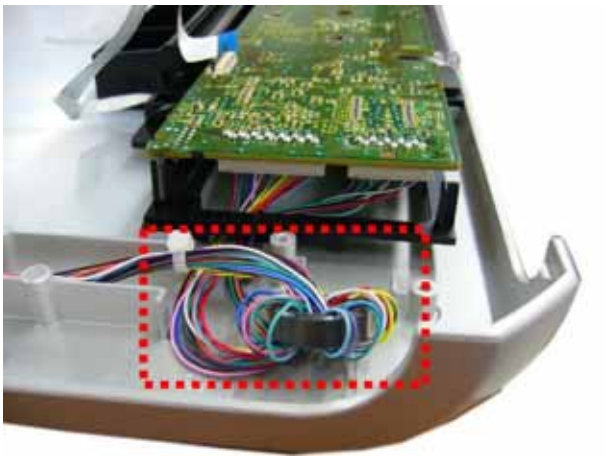
(i) Separate the scanner unit from the document cover unit.

(ii) Remove screws from the bottom of the document cover unit.

(iii) Remove screws, and disconnect the flexible cable and harness.



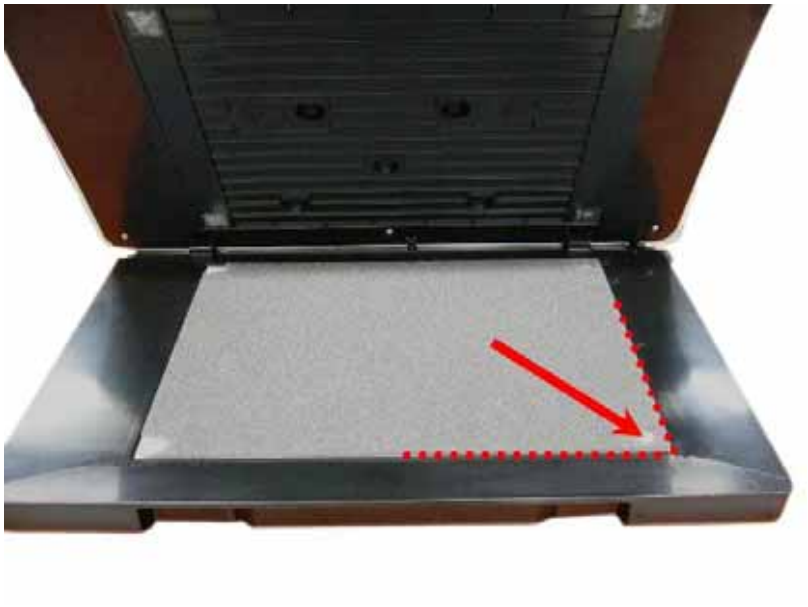
Harness and core bundled:



(iv) Remove 2 screws from the LCD hinge.

(3) Document pressure sheet replacement Be cautious of the following when replacing the document pressure sheet:

(i) Position one of the corners of the document pressure sheet to the reference mark (indicated by the red arrow below) on the platen glass.



(ii) Slowly close the document cover unit so that the document pressure sheet will fix to the cover unit with the double-sided adhesive tape in 4 corners.

(iii) Visually confirm that there is no significant gap between the document cover unit frame and the document pressure sheet.

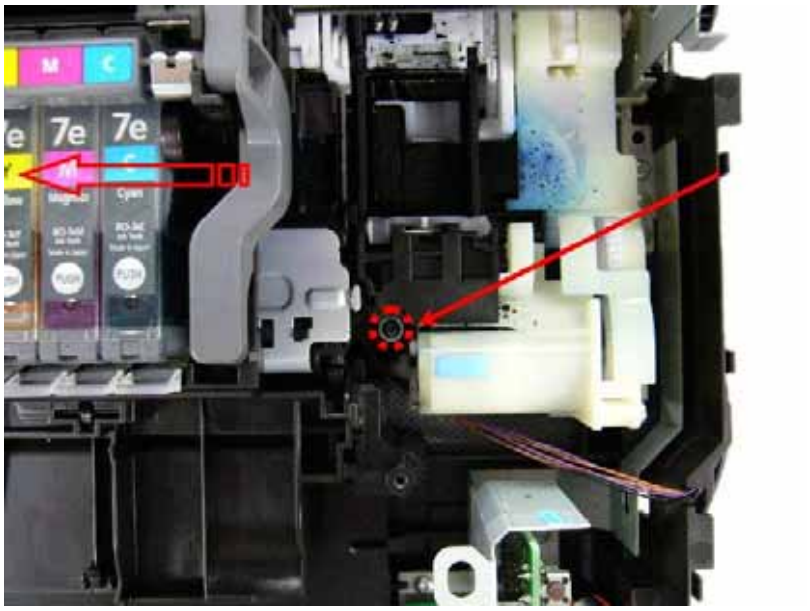
(4) Printer unit separation from the bottom case unit

(i) Unlocking the carriage unit

To remove the screw beneath the carriage unit in the home position, unlock the carriage unit first as follows:

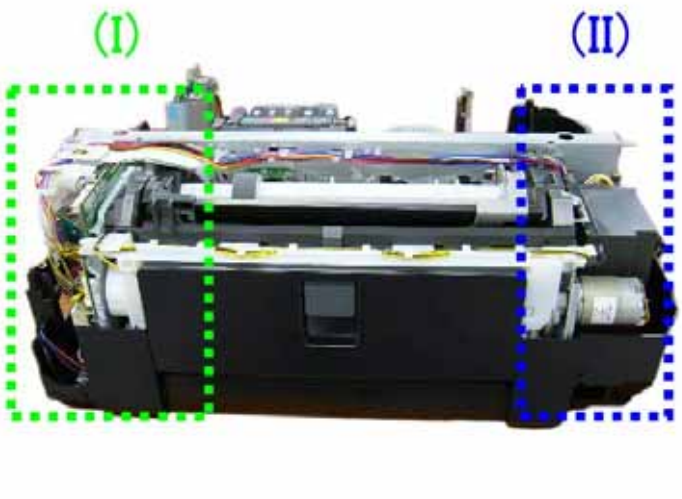
Rotate the gear (indicated by the red square) toward the rear side of the machine 2 or 3 times. The carriage will be unlocked.

(ii) Slide the carriage to the opposite of the home position, and remove the screw.

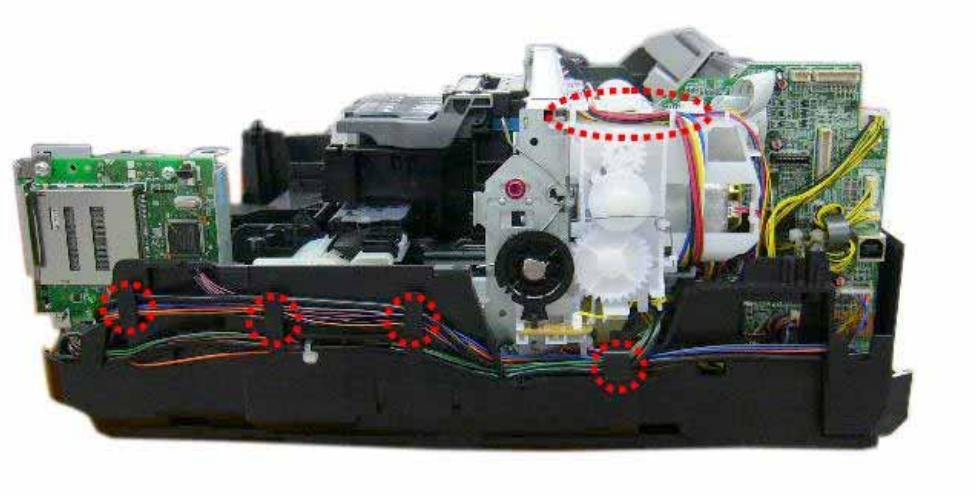


(5) Flexible cable and harness wiring, connection

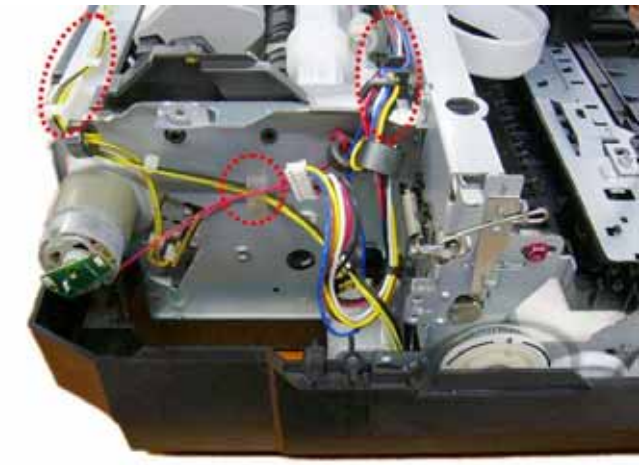
Be cautious of wiring of the flexible cables and harness. Improper wiring or connection may cause breakage of a line, leading to ignition or emission of smoke.



(i) Logic board ass'y wiring



(ii) Paper feed motor side wiring



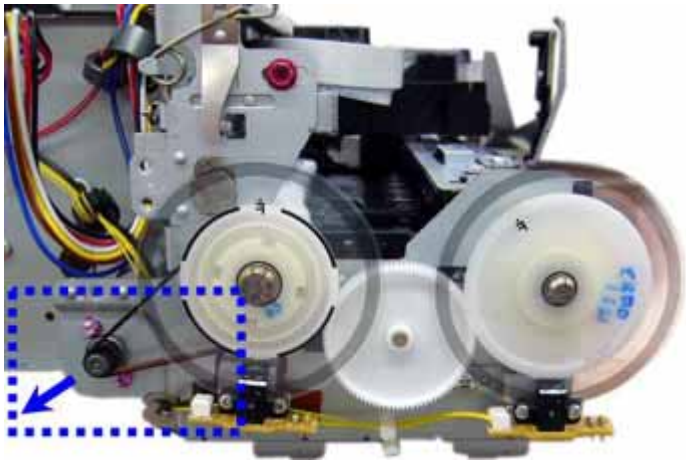
<1-3-2. Special Notes on Repair Servicing>

3-3. Adjustment / Settings

(1) Paper feed motor adjustment

1) When attaching the motor, fasten the screws so that the belt is properly stretched (in the direction indicated by the blue arrow in the figure below).

2) After replacement, be sure to perform the service test print, and confirm that no strange noise or faulty print operation (due to dislocation of the belt or gear, or out-of-phase motor, etc.) occurs.



Caution:

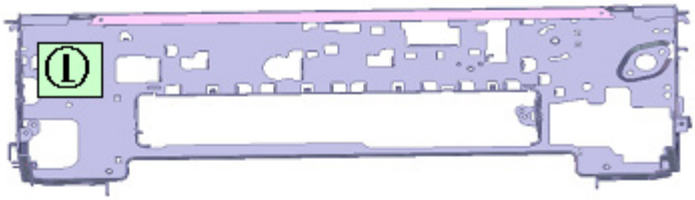
The red screws securing the paper feed motor may be loosened only at replacement of the paper feed motor unit. DO NOT loosen them in other cases.

(2) Grease application

■ Printer Unit

1 drop = 9 to 18 mg

No	Part name	Where to apply grease / oil	Drawing No.	Grease / oil	Grease / oil amount (mg)	Number of drops x locations
1	Chassis ass'y	Entire surface the carriage slider contacts	(1)	Floil KG107A	27 to 54	3 x 1
2	Adjust plate L	Carriage shaft cam L sliding portion	(2)	Floil KG107A	18 to 36	2 x 1
3	Chassis ass'y	Carriage shaft sliding portion on the left side of the chassis (1 location)	(3)	Floil KG107A	9 to 18	1 x 1
4	Adjust plate R	Carriage shaft cam R sliding portion	(4)	Floil KG107A	18 to 36	2 x 1
5	Chassis ass'y	Carriage shaft sliding portion on the right side of the chassis (1 location)	(5)	Floil KG107A	9 to 18	1 x 1
6	Chassis ass'y	PR lift shaft cam contact portion (3 locations)	(6)	Floil KG107A	18 to 27	1.5 x 3
7	Idler pulley	The shaft surface which contacts the idler pulley hole	(7)	Floil KG107A	9 to 18	1 x 1
8	Carriage shaft	Entire surface of the carriage shaft where the carriage unit slides	(8)	Floil KG107A	200 to 400	
9	Carriage shaft spring L	Carriage shaft sliding portion (to the end of the spring)	(9)	Floil KG107A	9 to 18	1 x 1
10	Carriage shaft	Carriage shaft surface where the carriage unit slides (and where the machine-application of the grease is not feasible)	(10)	Floil KG107A	9 to 18	1 x 1
11	CL gear base	Outer surface of the CL idle gear R cylinder	(11)	Floil KG107A	9 to 18	1 x 1
12	CL gear base	Outer surface of the CL output gear cylinder	(12)	Floil KG107A	9 to 18	1 x 1
13	CL input gear	Joint of the CL gear base	(13)	Floil KG107A	9 to 18	1 x 1
14	CL input gear	CL input gear teeth	(14)	Floil KG107A	9 to 18	1 x 1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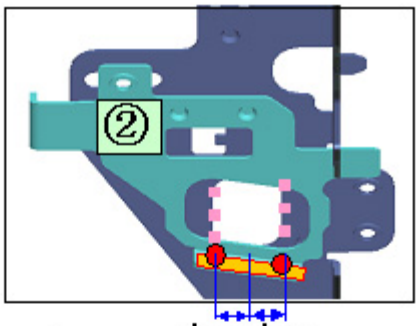
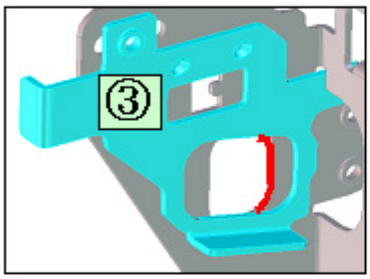

②
4mm 4mm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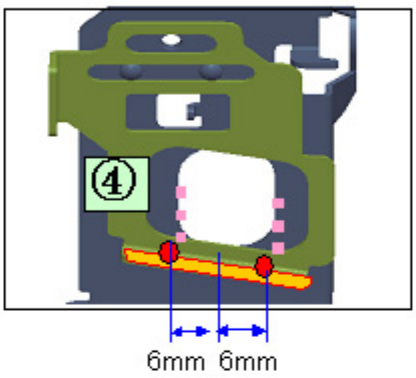
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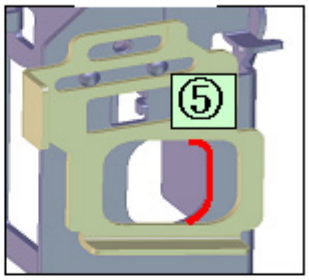
6mm 6mm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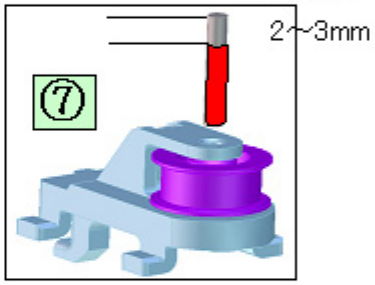
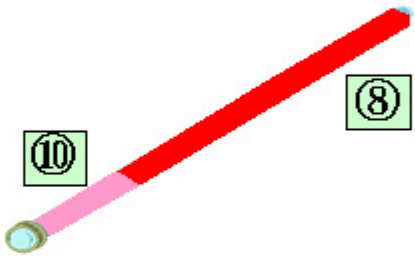
⑥


⑦
2~3mm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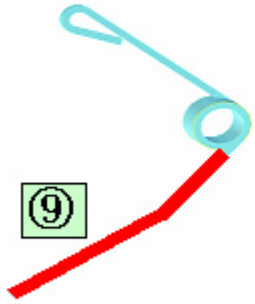
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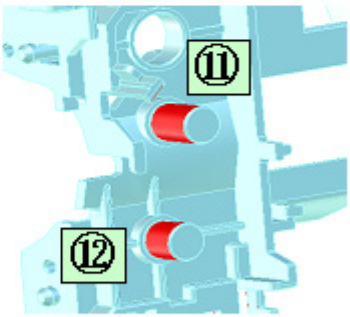
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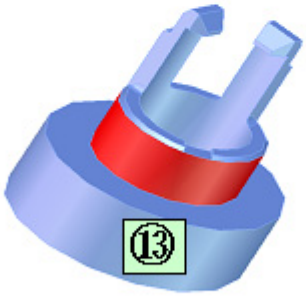
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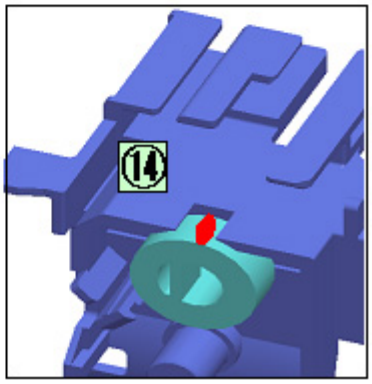
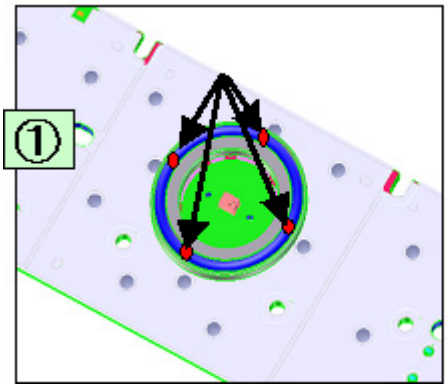
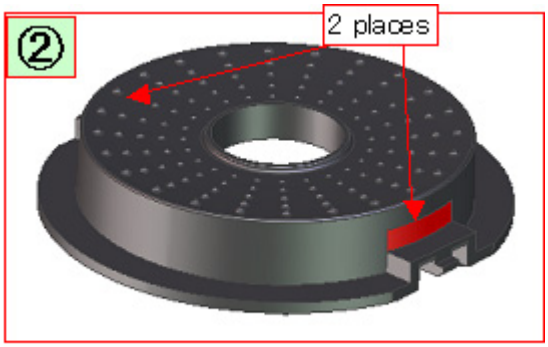

⑭

■ Other

1 drop = 9 to 18 mg

No	Part name	Where to apply grease / oil	Drawing No.	Grease / oil	Grease / oil amount (mg)	Number of drops x locations
1	Jog wheel base	Easy-Scroll Wheel sliding portion	(1)	Floil KG107A	9 to 18	1 x 4
2	Jog wheel	Ring key joint	(2)	Floil KG107A	3	





(3) Ink absorber counter setting

When the logic board ass'y is replaced, reset the ink absorber counter. In addition, according to the ink absorber counter value, replace the ink absorber (ink absorber kit). The standard counter value for ink absorber replacement is given in the table below.

Ink absorber counter value*1	Ink absorber kit replacement
Less than 7%	Not required.
7% or more	Required.

*1: Check the ink absorber counter value by service test print or EEPROM information print.
[See 3-3. Adjustment / Settings, (5) Service mode, for details.]

(4) User mode

Function	Procedures	Remarks
Print head manual cleaning	See "Standalone machine operation" below, or perform from the MP driver Maintenance tab.	
Print head deep cleaning	See "Standalone machine operation" below, or perform from the MP driver Maintenance tab.	
Paper feed roller cleaning	See "Standalone machine operation" below.	
Nozzle check pattern printing	See "Standalone machine operation" below, or perform from the MP driver Maintenance tab.	
Print head alignment (automatic / manual)	See "Standalone machine operation" below, or perform from the MP driver Maintenance tab.	In Custom Settings of the MP driver Maintenance tab, manual print head alignment (by selecting the optimum values) as with the conventional models can be performed.
Bottom plate cleaning	See "Standalone machine operation" below, or perform from the MP driver Maintenance tab.	Cleaning of the platen ribs when the back side of paper gets smeared.
Print head replacement	The print head is replaceable at the same position as for ink tank replacement. (Open the scanning unit. When the carriage stops at the center, the print head can be replaced.)	

<Standalone machine operation>

Turn on the machine. On the operation panel, press the HOME button, select **Settings**, and **Maintenance** or **Device settings**, then a desired function.

Menu	Remarks
Cleaning	
Nozzle check pattern	
Deep cleaning	
Roller cleaning	
Auto head align (automatic print head alignment)	
Manual head align (manual print head alignment)	
Bottom plate cleaning	Fold a sheet of A4 or Letter size plain paper in half, then open it. Set the paper in the ASF with the opened surface facing up.
Prevent paper abrasion (Increase the head-to-paper distance.)	Press the HOME button. Select **Settings**, **Device settings**, **Print settings**, then **Prevent paper abrasion**.

<1-3-3,Adjustment / Settings (1)~(4) >

(5) Service mode

A: Service test print, EEPROM initialization, Ink absorber counter resetting

Function	Procedures	Remarks
Service test print - Model name - ROM version - USB serial number - Ink absorber counter value (ink amount in the ink absorber) - Ink system function check result	See "Service mode operation procedures" below.	Set a sheet of A4 or letter size paper. For print sample, see 3-4. Verification Items, (1) Service test print, <Service test print sample>.
EEPROM initialization	See "Service mode operation procedures" below.	The following items are NOT initialized, and the shipment arrival flag is not on: - USB serial number - Destination settings - Ink absorber counter value (ink amount in the ink absorber) - LF / Eject correction value - Left margin correction value - Record of disabling the function to detect the remaining ink amount
Ink absorber counter reset	See "Service mode operation procedures" below.	If the ink absorber counter value is 7% or more, replace the ink absorber kit.
Destination settings	See "Service mode operation procedures" below.	Initialize EEPROM after the destination settings.
LF / Eject correction	See "Service mode operation procedures" below.	
Left margin correction	See "Service mode operation procedures" below.	
Button and LCD test	See "Service mode operation procedures" below.	
Ink absorber counter setting (registration of the data of the ink amount in the ink absorber)	See "Service mode operation procedures" below.	

Note: At the end of the service mode, press the ON/OFF button. The paper lifting plate of the sheet feed unit will be raised.

<Service mode operation procedures>

1) With the machine power turned off, while pressing the Stop/Reset button, press and hold the ON/OFF button. (DO NOT release the buttons). The Power LED lights in green to indicate that a function is selectable.

2) While holding the ON/OFF button, release the Stop/Reset button. (DO NOT release the ON/OFF button.)

3) While holding the ON/OFF button, press the Stop/Reset button 2 times, and then release both the ON/OFF and Stop/Reset buttons. (Each time the Stop/Reset button is pressed, the Alarm and Power LEDs light alternately, Alarm in orange and Power in green, starting with Alarm LED.)

4) When the Power LED lights in green, press the Stop/Reset button the specified number of time(s) according to the function listed in the table below, then press the ON/OFF button. (Each time the Stop/Reset button is pressed, the Alarm and Power LEDs light alternately, Alarm in orange and Power in green, starting with Alarm LED.)

Time(s)	LED indication	Function	Remarks
0 times	Green (Power)	Power off	When the print head is not installed, the carriage returns and locks in the home position capped.
1 time	Orange (Alarm)	Service test print	See 3-4. Verification Items, (1) Service test print.
2 times	Green (Power)	EEPROM information print	See 3-4. Verification Items, (2) EEPROM information print.
3 times	Orange (Alarm)	EEPROM initialization	
4 times	Green (Power)	Ink absorber counter resetting	
5 times	Orange (Alarm)	Destination settings	Press the Stop/Reset button the specified number of time(s) according to the destination.
6 times	Green (Power)	Print head deep cleaning	Cleaning of both black and color
7 times	Orange (Alarm)	n/a	Not used in servicing.
8 times	Green (Power)	n/a	Not used in servicing.
9 times	Orange (Alarm)	n/a	Not used in servicing.
10 times	Green (Power)	LF / Eject correction	
11 times	Orange (Alarm)	Left margin correction	
12 times	Green (Power)	Button and LCD test	
13 times	Orange (Alarm)	Ink absorber counter setting	
14 times	Green (Power)	Return to the menu selection	
15 times or more	Orange (Alarm)	Return to the menu selection	

Note: - If the Stop/Reset button is pressed 16 or more times, the Alarm LED (orange) or COPY button (green) lights steadily without any changes.

- At the end of the service mode, press the ON/OFF button. The paper lifting plate of the sheet feeder unit will be raised.

B: Destination settings

Time(s)	LED indication	Destination	CD / DVD print
0 times	Green (Power)	No change of the destination	
1 time	Orange (Alarm)	Japan	Supported
2 times	Green (Power)	Korea	Not supported
3 times	Orange (Alarm)	US, CND, LAM	Not supported
4 times	Green (Power)	Europe	Supported
5 times	Orange (Alarm)	Australia	Supported
6 times	Green (Power)	Asia	Supported
7 times	Orange (Alarm)	China	Supported
8 times	Green (Power)	Taiwan	Supported
9 times or more	Orange (Alarm)	Return to the menu selection	

Note: After setting the destination, confirm the model name and destination in service test print or EEPROM information print.

C: LF / Eject correction

After replacement of the LF roller, eject roller, logic board, or platen unit in repair servicing or in refurbishment operation, perform the adjustment.

Details: Print the LF / Eject correction pattern on a sheet of paper. Select the Pattern No. (0 to 2) in which streaks or lines are the least noticeable, press the Stop/Reset button the same number of time(s) as the selected Pattern No., then press the ON/OFF button. (See the flowchart below.)

1) In the LF /Eject correction mode, press the Stop/Reset button the specified number of time(s) according to the paper to be used in LF / Eject correction listed in the table below, then press the ON/OFF button. (Set a sheet of selected paper in the ASF.)

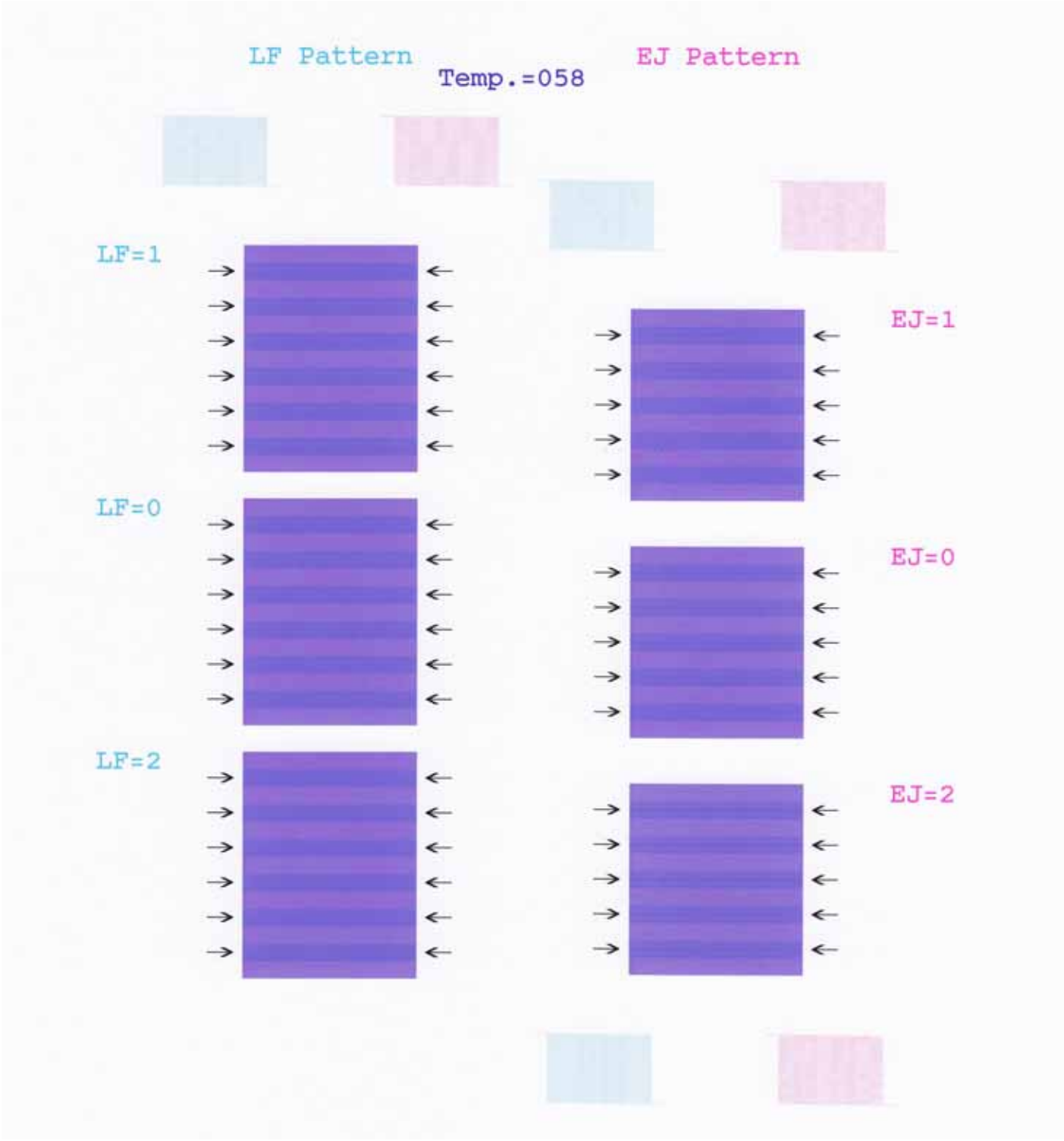
Time(s) (L)	Paper
1 time	HR-101
2 times	GF-500, Office Planner
3 times	HP BrightWhite
4 times	Canon Extra, STEINBEIS

Note: - Each time the Stop/Reset button is pressed, the Alarm and Power LEDs light alternately, Alarm in orange and Power in green.

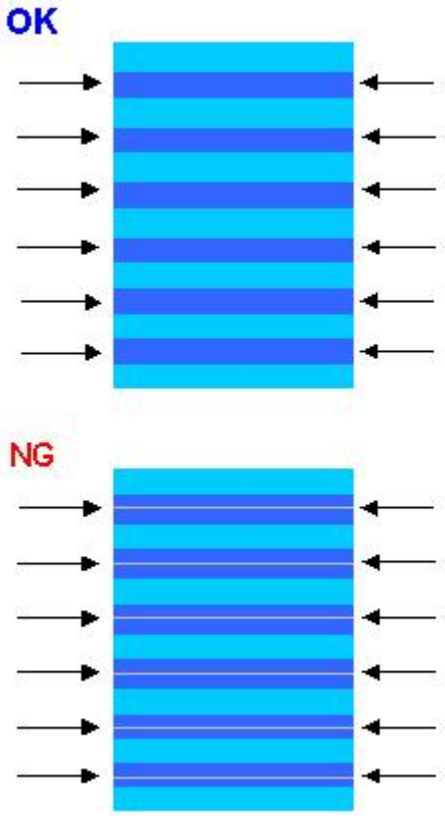
- If the Stop/Reset button is NOT pressed, and only the ON/OFF button is pressed, the machine remains in the LF / Eject correction mode.

- If the Stop/Reset button is pressed 5 times or more, then the ON/OFF button is pressed, the machine returns to the service mode menu selection.

2) The LF / Eject correction pattern for the selected paper is printed. (LF correction values from 0 to 2, Eject correction values from 0 to 2)



3) In the printout, select the Pattern No. in which streaks or lines are the least noticeable, press the Stop/Reset button the same number of time (s) as the selected Pattern No., then press the ON/OFF button.



3-1) LF correction value

Selected pattern number	Number of times the Stop/Reset button is pressed (M)
1	1 time
0	0 times
2	2 times

Note: - Each time the Stop/Reset button is pressed, the Alarm and Power LEDs light alternately, Alarm in orange and Power in green.

- If the Stop/Reset button is pressed 3 times or more, then the ON/OFF button is pressed, the machine returns to the service mode menu selection.

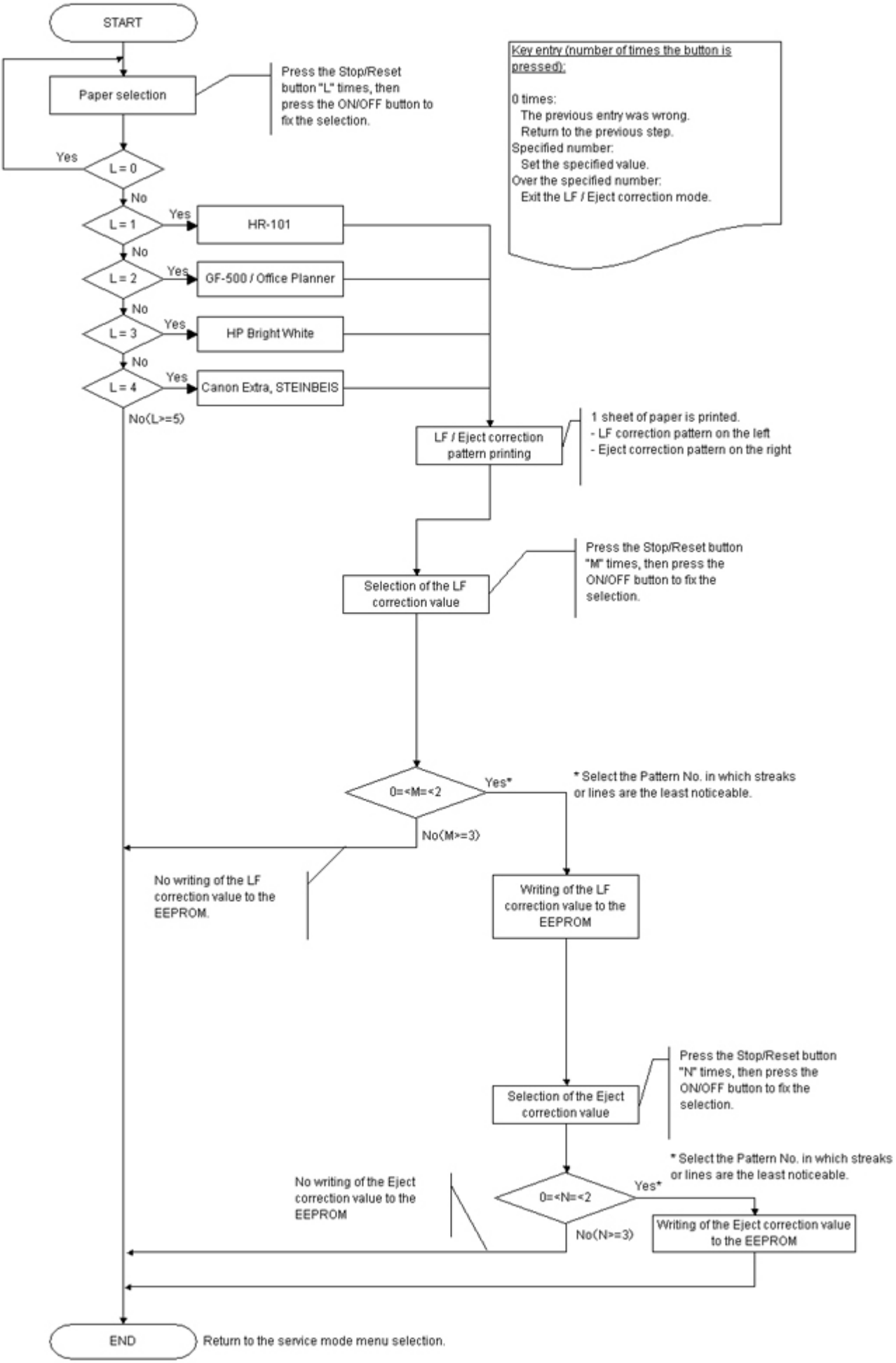
3-2) Eject correction value

Selected pattern number	Number of times the Stop/Reset button is pressed (N)
1	1 time
0	0 times
2	2 times

Note: - Each time the Stop/Reset button is pressed, the Alarm and Power LEDs light alternately, Alarm in orange and Power in green.

- If the Stop/Reset button is pressed 3 times or more, then the ON/OFF button is pressed, the machine returns to the service mode menu selection.

4) The selected LF correction value or Eject correction value is written to the EEPROM. The machine returns to the service mode menu selection after the Eject correction value is written to the EEPROM.


START
Paper selection
Press the Stop/Reset button "L" times, then press the ON/OFF button to fix the selection.
Key entry (number of times the button is pressed):
0 times:
The previous entry was wrong.
Return to the previous step.
Specified number:
Set the specified value.
Over the specified number:
Exit the LF / Eject correction mode.
Yes
L = 0
No
L = 1
Yes
HR-101
No
L = 2
Yes
GF-500 / Office Planner
No
L = 3
Yes
HP Bright White
No
L = 4
Yes
Canon Extra, STEINBEIS
No(L>=5)
LF / Eject correction pattern printing
1 sheet of paper is printed.
- LF correction pattern on the left
- Eject correction pattern on the right
Selection of the LF correction value
Press the Stop/Reset button "M" times, then press the ON/OFF button to fix the selection.
0=<M=<2
Yes*
* Select the Pattern No. in which streaks or lines are the least noticeable.
No(M>=3)
No writing of the LF correction value to the EEPROM.
Writing of the LF correction value to the EEPROM
Selection of the Eject correction value
Press the Stop/Reset button "N" times, then press the ON/OFF button to fix the selection.
* Select the Pattern No. in which streaks or lines are the least noticeable.
No writing of the Eject correction value to the EEPROM
0=<N=<2
Yes*
No(N>=3)
Writing of the Eject correction value to the EEPROM
END
Return to the service mode menu selection.

D: Left margin correction

Adjust the left margin for duplex printing or printing from the cassette.

1) Duplex printing from the ASF and cassette

In the left margin correction mode, press the Stop/Reset button 1 time, then press the ON/OFF button 1 time. Duplex printing is performed from the ASF and cassette.

Number of times the Stop/Reset button is pressed (L)	Operation
0 times	No operation
1 time	Duplex printing from the ASF and cassette
2 times	Return to the service mode menu selection (no writing to the EEPROM)

From each paper source (ASF and cassette), 2 sheets of paper are ejected. The first sheet is blank, and the left margin correction pattern is printed on the second sheet.

<Printing sequence>

For detail, see the flowcharts below.

i) A sheet of paper feeds from the ASF, and ejected blank (single-sided printing).

ii) A sheet of paper feeds from the ASF. Nothing is printed on the front side, and the pattern is printed on the back side (duplex printing).

iii) A sheet of paper feeds from the cassette, and ejected blank (single-sided printing).

iv) A sheet of paper feeds from the cassette. The pattern is printed on both sides of paper (duplex printing).

A total of 4 sheets are ejected.

After this, set the correction value to the EEPROM in the steps below.

2) Selection of the parameter mode for left margin correction

Press the Stop/Reset button the specified number of time(s) according to the parameter mode listed in the table below, then press the ON/OFF button.

Each time the Stop/Reset button is pressed, the Alarm and Power LEDs light alternately, Alarm in orange and Power in green.

Number of times the Stop/Reset button is pressed (M)	Parameter mode
0 times	Duplex printing from the ASF and cassette
1 time	Back side of paper fed from the ASF
2 times	Front side of paper fed from the cassette
3 times	Back side of paper fed from the cassette
4 times or more	Return to the service mode menu selection (after writing to the EEPROM)

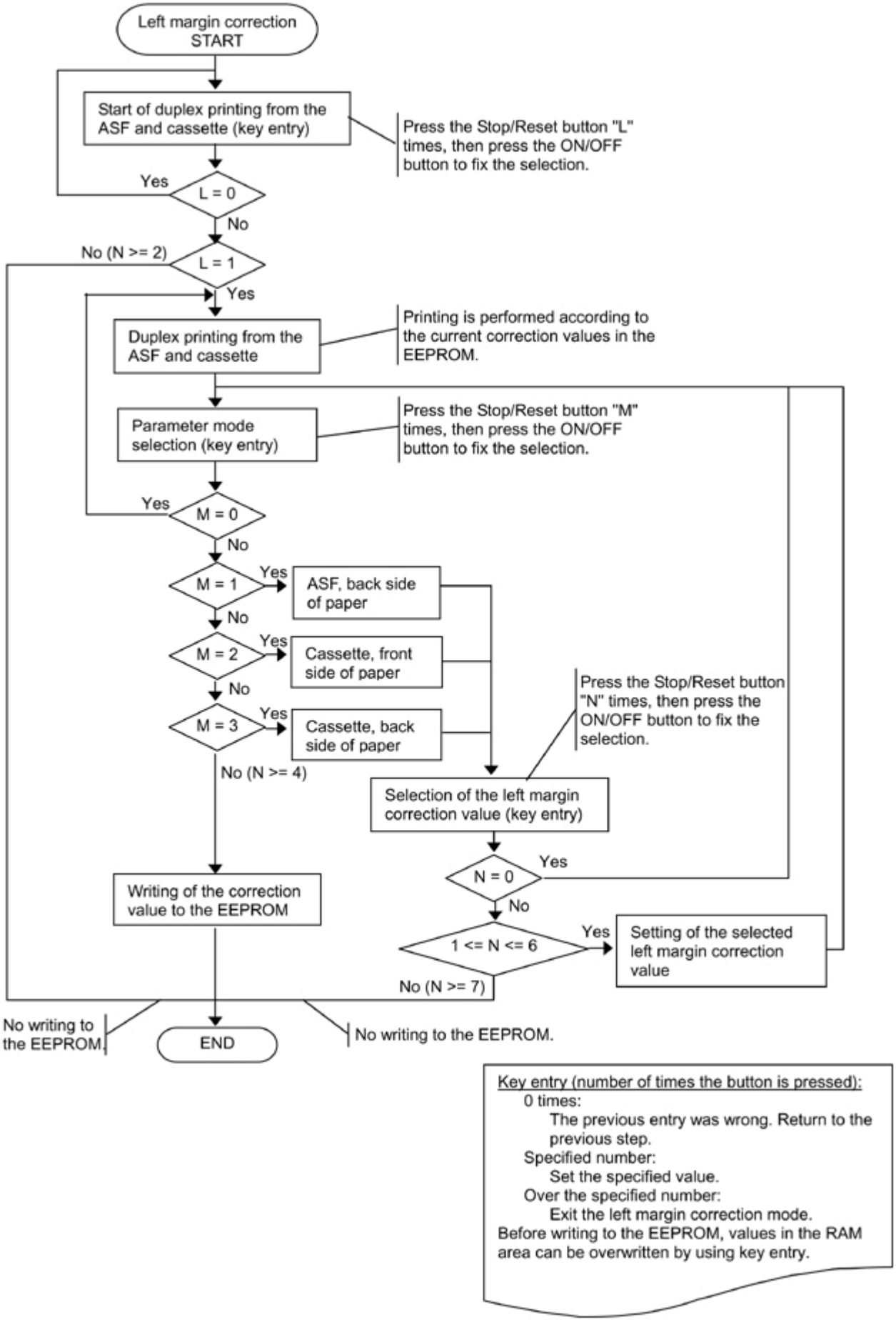
3) Setting of the left margin correction value ("+" means to increase the left margin)

Press the Stop/Reset button the specified number of time(s) according to the correction value listed in the table below, then press the ON/OFF button.

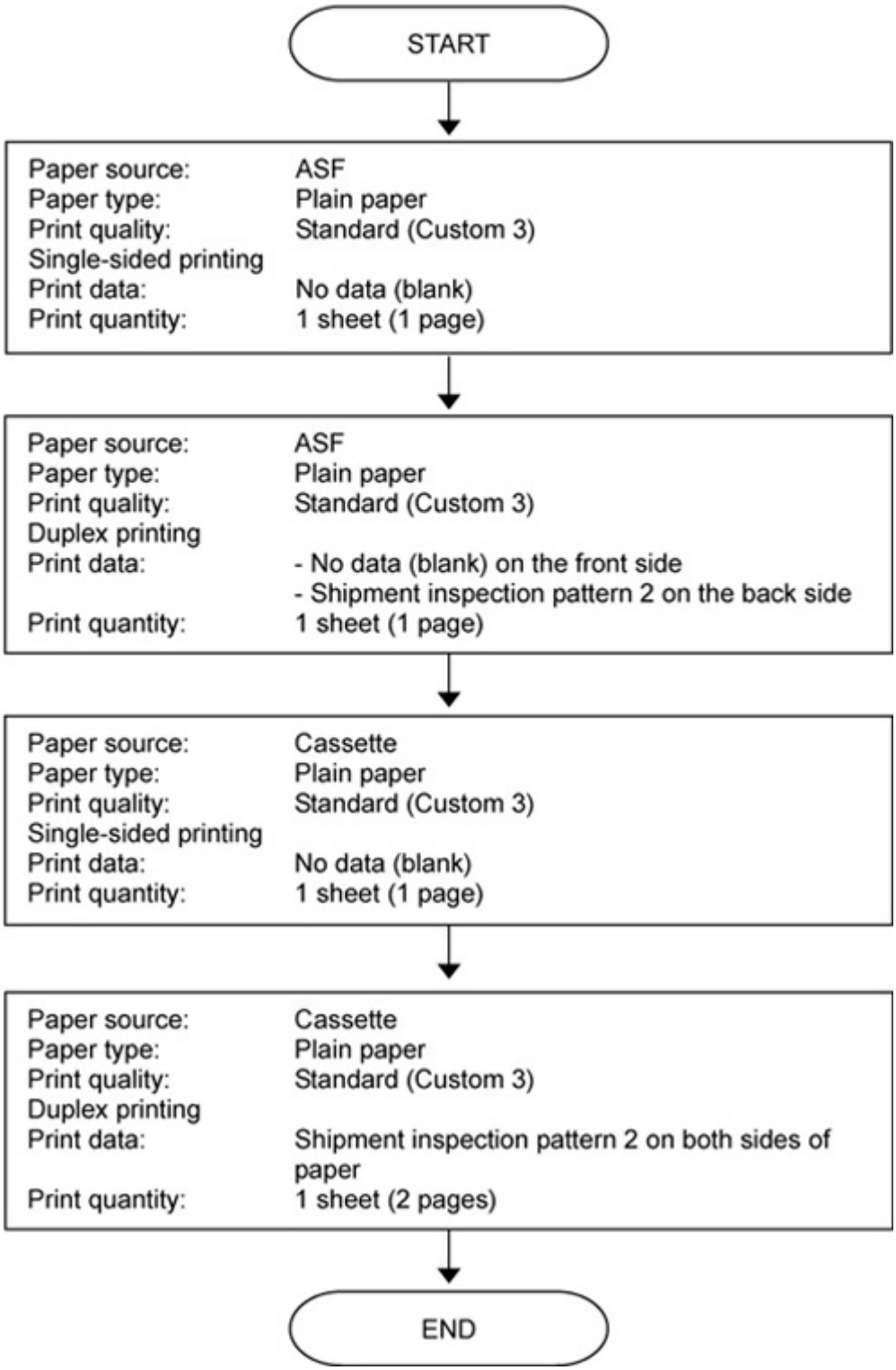
Number of times the Stop/Reset button is pressed (N)	Left margin correction value
0 times	Return to the parameter mode selection for left margin correction
1 time	+1 pitch
2 times	+2 pitches
3 times	+3 pitches
4 times	-1 pitch
5 times	-2 pitches
6 times	-3 pitches
7 times or more	Return to the service mode menu selection (no writing to the EEPROM)

After the value is set, the machine returns to the parameter mode selection. Repeat steps 2) and 3) to adjust the left margin in each parameter mode: "back side of paper fed from the ASF," "front side of paper fed from the cassette," and "back side of paper fed from the cassette."

4) After the left margin correction in all the parameter modes is completed, press the Stop/Reset button 4 times or more in the parameter mode selection, then press the ON/OFF button to return to the service mode menu selection.


Left margin correction START
Start of duplex printing from the ASF and cassette (key entry)
Press the Stop/Reset button "L" times, then press the ON/OFF button to fix the selection.
Yes
L = 0
No
No (N >= 2)
L = 1
Yes
Duplex printing from the ASF and cassette
Printing is performed according to the current correction values in the EEPROM.
Parameter mode selection (key entry)
Press the Stop/Reset button "M" times, then press the ON/OFF button to fix the selection.
Yes
M = 0
No
M = 1
Yes
ASF, back side of paper
No
M = 2
Yes
Cassette, front side of paper
No
M = 3
Yes
Cassette, back side of paper
No (N >= 4)
Press the Stop/Reset button "N" times, then press the ON/OFF button to fix the selection.
Selection of the left margin correction value (key entry)
N = 0
Yes
No
1 <= N <= 6
Yes
Setting of the selected left margin correction value
No (N >= 7)
Writing of the correction value to the EEPROM
No writing to the EEPROM.
END
No writing to the EEPROM.
Key entry (number of times the button is pressed):
0 times:
The previous entry was wrong. Return to the previous step.
Specified number:
Set the specified value.
Over the specified number:
Exit the left margin correction mode.
Before writing to the EEPROM, values in the RAM area can be overwritten by using key entry.

Duplex printing from the ASF and cassette


START
Paper source: ASF
Paper type: Plain paper
Print quality: Standard (Custom 3)
Single-sided printing
Print data: No data (blank)
Print quantity: 1 sheet (1 page)
Paper source: ASF
Paper type: Plain paper
Print quality: Standard (Custom 3)
Duplex printing
Print data: - No data (blank) on the front side
- Shipment inspection pattern 2 on the back side
Print quantity: 1 sheet (1 page)
Paper source: Cassette
Paper type: Plain paper
Print quality: Standard (Custom 3)
Single-sided printing
Print data: No data (blank)
Print quantity: 1 sheet (1 page)
Paper source: Cassette
Paper type: Plain paper
Print quality: Standard (Custom 3)
Duplex printing
Print data: Shipment inspection pattern 2 on both sides of paper
Print quantity: 1 sheet (2 pages)
END

E: Ink absorber counter setting

Set the ink absorber counter value to a replaced new EEPROM after the logic board is replaced in servicing.

1) Before replacement of the logic board ass'y, check the ink absorber counter value in EEPROM information print.
See 3-4. Verification Items, (2) EEPROM information print.

2) In the ink absorber counter setting mode, press the Stop/Reset button the specified number of time(s) according to the ink absorber whose counter value should be transferred to the replaced new EEPROM. (Only the main ink absorber for the MP600)

Time(s)	Ink absorber	Remarks
0 times	Main ink absorber	
1 time	Platen ink absorber	Not valid for the MP600
2 times	Both the main and platen ink absorbers	Only the main ink absorber is valid for the MP600
3 times or more	Not valid	Press the ON/OFF button to return to the ink absorber counter setting mode.

3) Press the ON/OFF button to proceed to the next step.

4) The ink absorber counter value can be set in 10% increments by pressing the Stop/Reset button. Press the Stop/Reset button the appropriate number of time(s) to select the value which is closest to the actual ink absorber counter value.

Time(s)	Ink absorber counter value to be set (%)
0 times	0%
1 time	10%
2 times	20%
3 times	30%
4 times	40%
5 times	50%
6 times	60%
7 times	70%
8 times	80%
9 times	90%
10 times or more	Not valid. Press the ON/OFF button to return to the ink absorber counter setting mode.

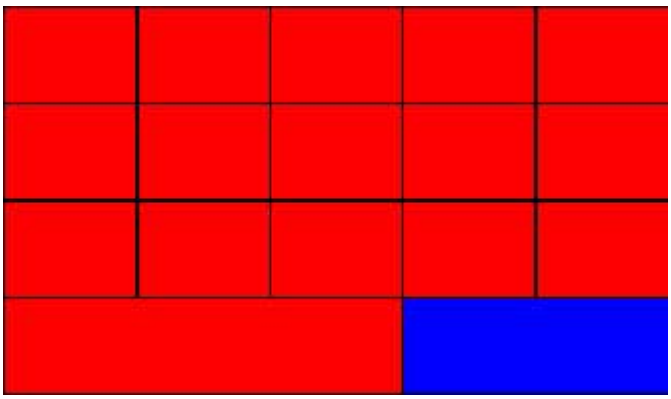
5) Press the ON/OFF button to set the selected value to the EEPROM. Print EEPROM information to confirm that the value is properly set to the EEPROM.

F: Button and LCD test

Confirm the operation after replacement of the operation panel unit, board, or LCD unit.

1) In the button and LCD test mode, press the Stop/Reset button. The LCD turns blue, waiting for a button to be pressed.
2) Press each button of the operation panel (total 17 buttons).
3) Only one button should be pressed at one time. If 2 or more buttons are pressed at the same time, only one of them is considered to be pressed, and the other buttons are ignored.

   The LCD is divided into segments, representing each button. The color of a segment corresponding to the pressed button changes to red.

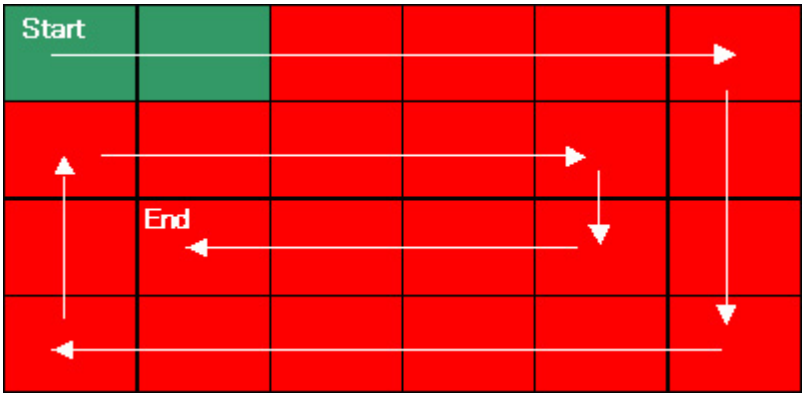


4) Rotate the Easy-Scroll Wheel clockwise and counterclockwise 1 round (24 steps) each, as follows:

   4-1) Rotate the Easy-Scroll Wheel clockwise step by step. The LCD is divided into 24 segments, representing each step. The color of a segment corresponding to the step changes from red to green.

   If the wheel is rotated counterclockwise before clockwise round completes, the color of segment(s) corresponding to the number of steps the wheel is rotated counterclockwise returns to red.

   If the wheel keeps rotated clockwise over 1 round (24 steps), the color of segment(s) corresponding to the extra number of steps returns to red, starting with the "Start" segment in the figure below.

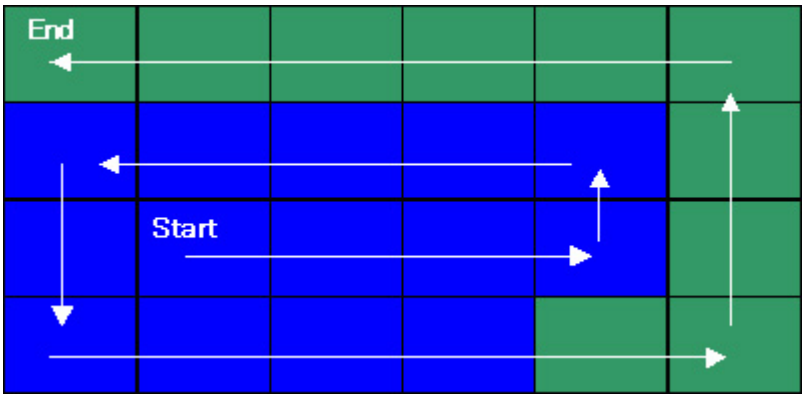


   4-2) When the Easy-Scroll Wheel is rotated clockwise 1 round (24 steps), press the OK button.

   4-3) Rotate the Easy-Scroll Wheel counterclockwise step by step. The LCD is divided into 24 segments, representing each step. The color of a segment corresponding to the step changes from green to blue.

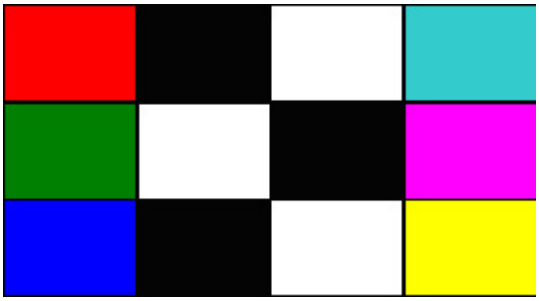
   If the wheel is rotated clockwise before counterclockwise round completes, the color of segment(s) corresponding to the number of steps the wheel is rotated clockwise returns to green.

   If the wheel keeps rotated counterclockwise over 1 round (24 steps), the color of segment(s) corresponding to the extra number of steps returns to green, starting with the "Start" segment in the figure below.



4-4) When the Easy-Scroll Wheel is rotated counterclockwise 1 round (24 steps), press the OK button. The color of all segments turns red.

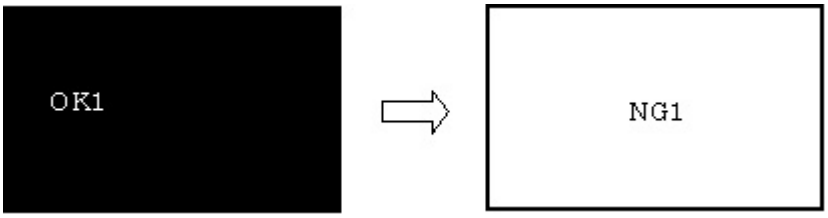
5) Open the scanning unit (printer cover) to display the color pattern. If there is any step left un-selected (a blue segment remained in step 4) above), even the Stop/Reset button is not accepted.



6) Adjust the transparent color and LCD flicker, as follows:

6-1) Press the OK button. "OK1" in white is displayed on the black background.

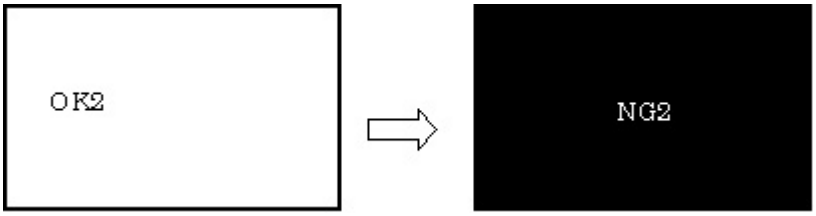
If the result is not good, "NG1" in black is displayed on the white background (transparent color) immediately after "OK1."



6-2) Press the OK button.

6-3) "OK2" in black is displayed on the white background.

If the result is not good, "NG2" in white is displayed on the black background (transparent color) immediately after "OK2."

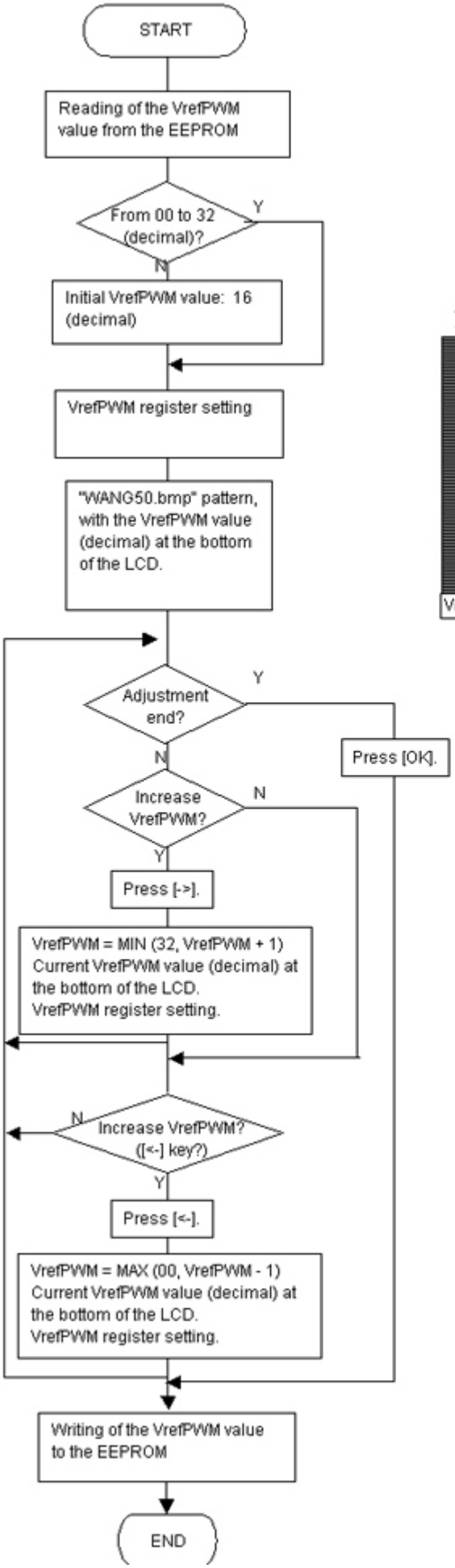


6-4) Press the OK button.

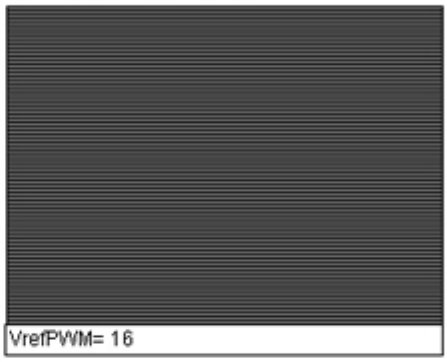
6-5) The machine enters the LCD flicker adjustment mode. (See the flowchart below.)

6-6) Press the ON/OFF to return to the service mode menu selection.

<Flicker adjustment mode flowchart>



"WANG50.bmp" pattern



<1-3-3, (5) Service mode_D~F>

3-4. Verification Items

(1) Service test print

<EEPROM information contents>

On the service test print (sample below), confirm the EEPROM information as shown below.

- Top area:

  MP600: Model name

  Vx.xx: ROM version

  D = xxx.x: Ink absorber counter value (%)

  USB (xxxxxx): USB serial number

- Middle area:

  JPN: Destination

- Bottom area:

  FA=xx xx xx: Reserved for plant use

  VrefPWM=xxxxx: TFT LCD flicker adjustment value

  Temp.=yyy: Internal temperature

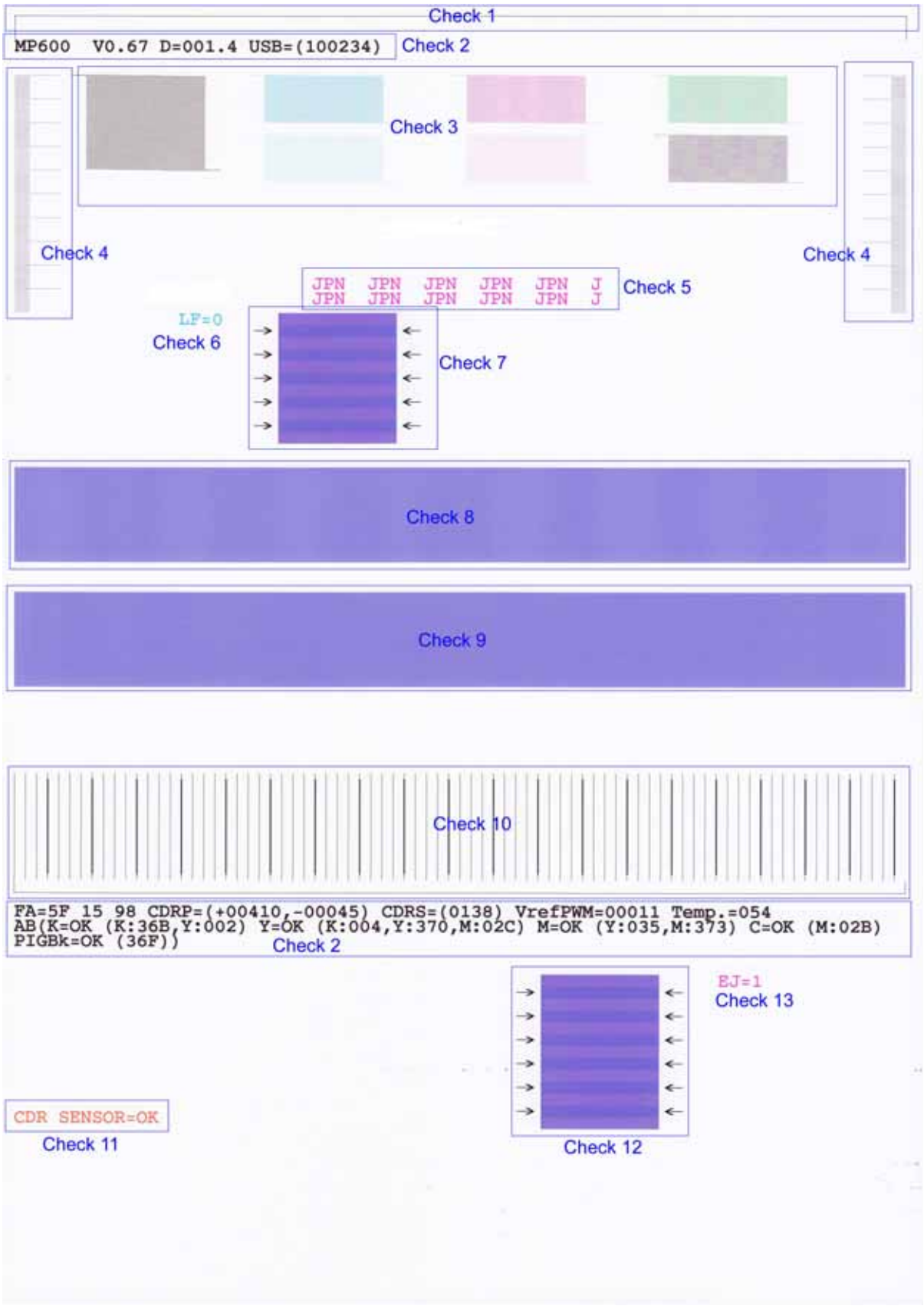
  AB(K=OK Y=....): Ink system function check result

<Print check items>

On the service test print (sample below), confirm the following items:

- Check 1, check pattern for top of form accuracy, skewed paper feeding, left margin, and carriage (outermost) accuracy
- Check 2, EEPROM information
- Check 3, check pattern for horizontal dot mis-alignment: Ink shall be ejected from all nozzles.
- Check 4, check pattern for irregular line feeding: There shall be no remarkable streaks or unevenness.
- Check 5, destination
- Check 6, LF correction value (The value selected in the LF correction is printed in cyan)
- Check 7, check pattern for LF correction (the check pattern selected in the LF correction)
- Check 8, check pattern for uneven printing due to carriage movement (9600 dpi mode): There shall be no remarkable unevenness.
- Check 9, check pattern for uneven printing due to carriage movement (standard mode): There shall be no remarkable unevenness.
- Check 10, check pattern for straight line accuracy: There shall be no remarkable dot mis-alignment on a line.
- Check 12, check pattern for Eject correction (the check pattern selected in the Eject correction)
- Check 13, Eject correction value (The value selected in the Eject correction is printed in magenta)

<Service test sample>



<1-3-4, (1) Service test print>

3-4. Verification Items

(2) EEPROM information print

<How to read EEPROM information print>

Print sample:

MP600 JPN V1.00 ST=2006/06/15-18:30 LPT=2006/07/09-09:09

ER(ER0=1000 ER1=5100) P_ON(S=00009) MSD(002)

IF(USB1=1) PC(M=002 R=000 T=001 D=009 C=000)

D=004.5

TPAGE(TTL=00232 COPY=00001)

CLT(BK=2006/06/28-18:30 CL=2006/07/01-18:30)

CH=001 CT(PBK=001 BK=001 Y=003 M=002 C=001)

IS(PBK=0 BK=0 Y=0 M=0 C=0)

A_REG=1

M_REG=0

UR(A(BKoe)=-01 B(Coe)=-02 C(SCoe)=-02 D(CLbi)=+01 E(SCLbi)=+01 F(C-SC)=-02

G(BK-CL)=000 H(BKbiPP)=+01 I(CLbiPP)=-01 J(SCLbiPP)=-01

K(NZctr)=+01 L(NZedge)=000 M(CLbiHiReso)=000 N(SCLbiHiReso)=000

CDIN(PB=000 OPB=000) BTIN=1

PAGE(All=00072 PP=00072 HR+MP=00000 PR+SP+SG=00000 GP=00000 PC=00000 EV=00000)

UCPAGE(All=00160 PP=00160 HR+MP=00000 PR+SP+SG=00000 GP=00000 PC=00000 EV=00000)

BPPAGE(All=00000 BPSP=00000 PC=00000)

CDPAGE(All=00000)

EDGE=00000 L=00000 BTPAGE=00000 CDR=00000

CDRP=(+0155, -0015) CDRS=(0139) LF=0 EJ=1 LM=(ASF_R:00 UT_F:00 UT_R:00)

INK_OFF(PBK=0 BK=0 Y=0 M=0 C=0)

Head TempBK=38.5 Head TempC=34.5 Env Temp=33.5

<Direct>

LG=01 Japanese CDI=00000 CDP=00000

CDD-PR (L=00000 2L=00000 PC=00000 A4=00000)

CDD-SP (L=00000 2L=00000 PC=00000 A4=00000)

CDD-MP (L=00000 2L=00000 PC=00000 A4=00000)

DCD-PP (L=00000 2L=00000 PC=00000 A4=00000)

DCD-FPP(L=00000 2L=00000 PC=00000 A4=00000)

DCD-MPP(L=00000 2L=00000 PC=00000 A4=00000)

PrnB=00000 SC=00000 Seal=00000

<Scanner>

SC=00034 SCAN_ER(ER0=0000 ER1=0000)

SC-dpi(75＝00000 150=00000 300=00029 600=00005 1200=00000 2400=00000 4800=00000)

SG(GY=00003 CL=00002)

<Copy>

MCASF(PP=00000 SP+PR+GP=00000 OTH=00000)

MCUT(PP=00000 SP+PR+GP =00000 OTH=00000)

CCASF(PP=00000 HR+MP=00000 PR+SP+SG=00000 GP=00000 PC=00000)

CCUT(PP=00000 HR+MP=00000 PR+SP+SG =00000 GP=00000 PC=00000)

Printed items:

1. Model name 2. Destination 3. ROM version 4. Installation date 5. Last printing time
6. Operator call/service call error record 7. Power-on count (soft) 8. Longest period where printing stops
9. Connected I/F (USB1) 10. Purging count (manual/deep cleaning/timer/dot count/ink tank replacement)
11. Ink amount in the ink absorber
12. Total print pages (TPAGE) (TTL = printing from a computer + copy, COPY = copy)
13. Cleaning time (CLT:BK/CL)
14. Print head replacement count 15. Ink tank replacement count (PBK/BK/Y/M/C)
16. Ink status (PBK/BK/Y/M/C) => 0 (High) / 1 (Middle) / 2 (Low) / 3 (Empty)
17. Automatic print head alignment by user
18. Manual print head alignment by user
19. User print head alignment values

    (Bkoe/Coe/SCoe/CLbi/SCLbi/C-SC/BK-CL/BkbiPP/CLbiPP/SCLbiPP/NZctr/NZedge/CLbiHiReso/SCLbiHiReso)
20. Camera Direct Print-supported device connection record (Canon PictBridge-supported camera, Other PictBridge-supported camera) (CD IN = Camera Direct INsert) 21. Bluetooth-supported device connection record
22. ASF feed pages (PAGE) (total, plain paper, High Resolution Paper & Matte Photo Paper, Photo Paper Pro & Photo Paper Plus Glossy & Photo Paper Plus Semi-gloss, Glossy Photo Paper, postcard, envelope)
23. U-turn cassette feed pages (total, plain paper, High Resolution Paper & Matte Photo Paper, Photo Paper Pro & Photo Paper Plus Glossy & Photo Paper Plus Semi-gloss, Glossy Photo Paper, postcard, envelope)
24. Auto duplex print pages (BPPAGE = Both Print PAGE) (total, Photo Paper Plus Double Sided, postcard)
25. Camera Direct print pages (CDPAGE=Camera Direct PAGE) (Total)
26. Borderless print pages (total) 27. 4x6 print pages 28. Bluetooth print pages 29. Number of CDs and DVDs printed
35. Disabling of the remaining ink amount detection function (0 = never disabled, 1 = disabled)
36. Print head temperature (Black / Color) 37. Internal temperature

<Direct>

38. Language 39. Memory card use count (CDI = Card Install) 40. Total Card Direct print pages (CDP = Card Print)
41. Card Direct print pages: Photo Paper Pro (CDD-PR = Card Direct PR) (4 x 6, 5 x 7, postcard, A4/Letter)
42. Card Direct print pages: Photo Paper Plus Glossy (CDD-SP = Card Direct SP/PP) (4 x 6, 5 x 7, postcard, A4/Letter)
43. Card Direct print pages: Matte Photo Paper (CDD-MP = Card Direct MP) (4 x 6, 5 x 7, postcard, A4/Letter)
44. Camera Direct print pages: Photo Paper (DCD-PP = Digital Camera Direct Photo Paper) (4 x 6, 5 x 7, postcard, A4/Letter)
45. Camera Direct print pages: Fast Photo Paper (DCD-FPP = Digital Camera Direct Fast Photo Paper) (4 x 6, 5 x 7, postcard, A4/Letter)
46. Camera Direct print pages: Matte Photo Paper (DCD-MPP = Digital Camera Direct Matte Photo Paper) (4 x 6, 5 x 7, postcard, A4/Letter)
47. Print Beam feed pages 48. Business card and Credit Card size paper feed pages 49. Sticker sheets fed

<Scanner>

50. Total scan count (SC = Scan Count)
51. The last 2 errors (SCAN_ER) (0 = the last error, 1 = the one before the last) (including user errors and copy scan errors. Even if the same errors occur, they are recorded individually.)
52. Scan count by scanning resolution (SC-dpi = Scan Count dpi) (75, 150, 300, 600, 1200, 2400, 4800 dpi)
53. Scan count by scanning gradation (SG = Scan Gradation) (grayscale, color)

<Copy>

54. Monochrome copy pages fed via the ASF (MCASF = Monochrome Copy ASF) (plain paper, Photo Paper Pro & Photo Paper Plus Glossy & Glossy Photo Paper, other)
55. Monochrome copy pages fed via the cassette (MCUT = Monochrome Copy U-Turn cassette) (plain paper, Photo Paper Pro & Photo Paper Plus Glossy & Glossy Photo Paper, other)
56. Color copy pages fed via the ASF (CCASF = color Copy ASF) (plain paper, High Resolution Paper & Matte Photo Paper, Photo Paper Pro & Photo Paper Plus Glossy & Photo Paper Plus Semi-gloss, Glossy Photo Paper, postcard)
57. Color copy pages fed via the cassette (CCUT = Color Copy U-Turn cassette) (plain paper, High Resolution Paper & Matte Photo Paper, Photo Paper Pro & Photo Paper Plus Glossy & Photo Paper Plus Semi-gloss, Glossy Photo Paper, postcard)

<1-3-4, (2) EEPROM information print>

4. MACHINE TRANSPORTATION

This section describes the procedures for transporting the machine for returning after repair, etc.

1) In the service mode, press the ON/OFF button to finish the mode, and confirm that the paper lifting plate of the sheet feed unit is raised.
2) Keep the print head and ink tanks installed in the carriage.
   See Caution 1 below.
3) Turn off the machine to securely lock the carriage in the home position. (When the machine is turned off, the carriage is automatically locked in place.)
   See Caution 2 below.

Caution:

(1) If the print head is removed from the machine and left alone by itself, ink (the pigment-based black ink in particular) is likely to dry. For this reason, keep the print head installed in the machine even during transportation.

(2) Securely lock the carriage in the home position, to prevent the carriage from moving and applying stress to the carriage flexible cable, or causing ink leakage, during transportation.

Memo:

If the print head must be removed from the machine and transported alone, attach the protective cap (used when the packing was opened) to the print head (to protect the print head face from damage due to shocks).

<1-4. MACHINE TRANSPORTATION>

Part 2

TECHNICAL REFERENCE

1. NEW TECHNOLOGIES

1) Easy-Scroll Wheel

With the Easy-Scroll Wheel, a menu can be easily selected by rotating the wheel clockwise or counterclockwise. Together with the operation panel which is located at the front center, usability has been significantly enhanced.

2) Print speed

By adopting longer nozzles and the double encoder system, higher photo print speed has been achieved.

- 4 x 6 photo (PP-101, standard, borderless)*1: Approx. 28 sec.
- Card Direct printing (4 x 6 borderless)*2: Approx. 43 sec.
- Camera Direct printing (4 x 6 borderless)*3: Approx. 44 sec.

Reference:

	Custom 5	Standard
Black text (plain paper, FINE pattern)	30ppm	14.8ppm
Color (plain paper, FINE pattern)	24ppm	11.6ppm

*1: Based on Canon standard pattern. Print speed may vary depending on system configuration, interface, software, document complexity, print mode, page coverage, type of paper used and does not take into account data processing time on host computer.

*2: When printing a 6 megapixel image taken by certain Canon digital camera from a memory card on default settings using Photo Paper Plus Glossy without border. Actual print speed may vary depending on image data, print mode, type of paper and type of memory card used.

*3: When printing a 6 megapixel image taken by certain Canon digital camera from PictBridge on default settings using Photo Paper Plus Glossy without border. Actual print speed may vary depending on image data, print mode, type of paper used and device that the printer is connected to.

Note: Notations for the Americas should be confirmed with the related marketing section of each sales company in the Americas.

3) Scanning resolution

The scanning resolution has been increased to 2,400 x 4,800 dpi.

4) Compact body

Compared with the previous model, the MP600 body size is reduced by 11 mm in height and 43 mm in depth, realizing more compact body that fits any home use environment.

5) Remaining ink amount indication sequence in 2006 products

In previous models, indication of the remaining ink amount differs between the individual ink tank system and the FINE cartridge system. In the 2006 models, the unified specifications have been dopted.
Major changes from the 2005 models:

- In Direct printing, printing will not be suspended at "Low Ink" indication. (Printing will start without a click by a user at the "Low Ink" message.)
- The remaining ink status will be indicated by the following 4 levels:

Low:	No raw ink is detected by the optical method. (From this point, the remaining ink amount will be determined by the dot count.)
Out:	No ink remains according to the dot count. A warning will be displayed to indicate that ink may have run out.
Empty:	No raw ink is detected by the optical method, and the dot count value exceeds the threshold of complete exhaustion of ink. A warning will be displayed to indicate that ink has run out. By pressing and holding the Stop/Reset button for 5 seconds or longer, the function to detect the remaining ink amount can be disabled.

Unknown: Raw ink remains, but the dot count value exceeds the threshold of complete exhaustion of ink.
By pressing and holding the Stop/Reset button for 5 seconds or longer, the function to detect the remaining ink amount can be disabled.

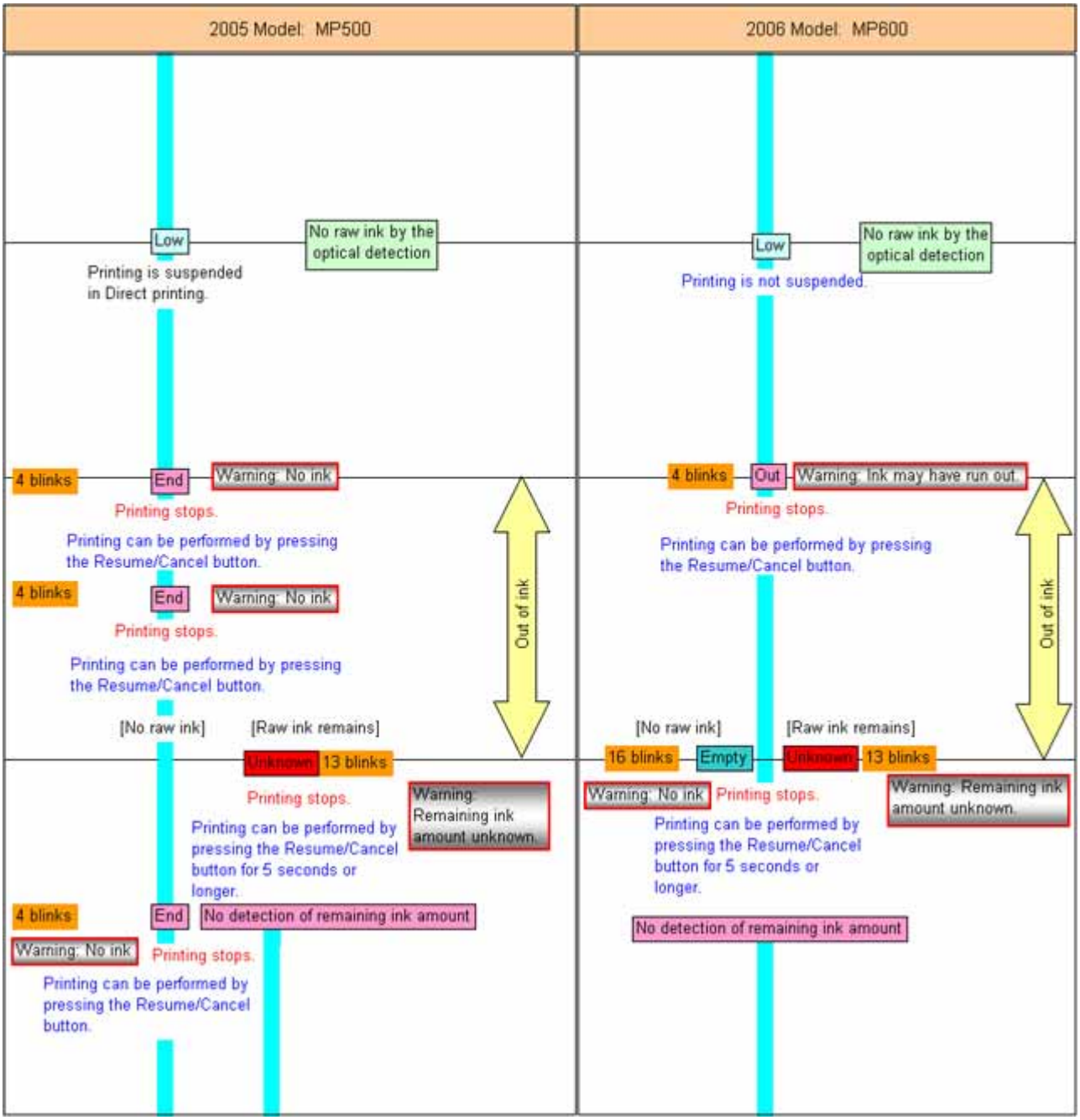
The remaining ink amount will be checked at any of the following timings:

- At the end of paper ejection*1
- At the end of print head cleaning
- At the end of initialization
- At the end of the following operation:

  Cover open => Ink tank removal and installation => Cover close

- In duplex printing, at the end of paper ejection after printing on the back side of paper*1

*1: Not every paper ejection. Only after the dot count exceeds the specified value.



<2-1. NEW TECHNOLOGIES>

2. CLEANING MODE AND AMOUNT OF INK PURGED

To prevent printing problems due to bubbles, dust, or ink clogging, print head cleaning is performed before the start of printing (when the cleaning flag is on), except in the following cases:

- Cleaning on arrival:

  1st: Performed when the scanning unit (printer cover) is closed after the print head and ink tanks are installed.

  2nd: Performed before automatic print head alignment.

  3rd: Performed before start of printing after automatic print head alignment.

- Manual cleaning / deep cleaning: Performed manually.

<Cleaning mode list>

Black: Pigment-based black
Color: Dye-based black, cyan, magenta, yellow

Condition	Details	Amount of ink used (g) (in the normal temperature/humidity environment)	Est. required time (sec.)(not including the time of opening the caps)
On arrival of the machine (All in sequence, except that black only for the 3rd cleaning)	First to third cleaning after shipped from the plant*1.	0.57 (Black) 2.246 (Color)	85 for the 1st and 2nd cleaning (All in sequence) 40 for the 3rd cleaning (Black only)
Dot count cleaning (Black)	When the specified number of dots are printed since the previous Black cleaning.	0.195 (Black)	35 (Black)
Timer cleaning - 0*2 (Black only)	If 24 to 504 hours have elapsed since the previous Black cleaning till the start of the next printing.	0.195 (Black)	35 (Black)
Timer cleaning - 1 (Black/Color)	If 504 to 720 hours have elapsed since the previous Black/Color cleaning till the start of the next printing.	0.195 (Black) 0.645 (Color)	35 (Black) 40 (Color)
Timer cleaning - 2 (All in sequence)	If 720 to 1,080 hours have elapsed since the previous Black/Color cleaning till the start of the next printing.	0.57 (Black) 1.056 (Color)	70
Timer cleaning - 3 (All in sequence)	If 1,080 to 2,160 hours have elapsed since the previous Black/Color cleaning till the start of the next printing.	1.27 (Black) 1.056 (Color)	75
Timer cleaning - 4 (All in sequence)	If 2,160 to 4,320 hours have elapsed since the previous Black/Color cleaning till the start of the next printing.	1.95 (Black) 1.056 (Color)	80
Timer cleaning - 5 (All in sequence)	If 4,320 or longer hours have elapsed since the previous Black/Color cleaning till the start of the next printing.	1.95 (Black) 1.056 (Color)	80
At print head replacement (All in sequence)	When the print head is removed and installed.	0.57 (Black) 2.246 (Color)	85
At ink tank replacement*3 (Black/Color/All in sequence)	When an ink tank is replaced (without the print head removal or re-installation)	0.375 (Black) 1.056 (Color)	70 (All in sequence) 35 (Black) 55 (Color)
Manual cleaning (Black/Color/All at the same time)	- Via the operation panel (All at the same time only)- Via the MP driver (Selectable from Black, Color, or All at the same time)	0.195 (Black) 0.645 (Color)	40 (All at the same time) 35 (Black) 40 (Color)
Deep cleaning (Black/Color/All at the same time)	Via the MP driver (Selectable from Black, Color, or All at the same time)	1.95 (Black) 1.056 (Color)	80 (All at the same time) 45 (Black) 55 (Color)
If the print head has not been capped before soft-power-on (All in sequence)		0.375 (Black) 1.056 (Color)	70 (All in sequence)

*1: The counter for the on-arrival cleaning is checked at opening and closing of the scanning unit (the first opening and closing only), before start of printing, at dot-count cleaning (at paper ejection), and at manual cleaning, and the on-arrival cleaning is performed according to the counter value. After each on-arrival cleaning, the counter value is reduced by 1.

When the counter value is 3, 2, or 1: On-arrival cleaning is performed.
When the counter value is 0: On-arrival cleaning is not performed.

*2: When 24 to 504 hours have elapsed since the previous Black cleaning, timer cleaning - 0 is performed. However, this cleaning will be conducted up to 5 times from the machine installation, and no further timer cleaning - 0 will be performed.

*3: When only the black ink tank is replaced, Black cleaning is performed. One of the color ink tanks is replaced, Color cleaning is performed. Both the black and color ink tanks are replaced, All-in-sequence cleaning is performed.

<2-2. CLEANING MODE AND AMOUNT OF INK PURGED>

3. PRINT MODE

	Default setting
	Selectable in the MP driver Main tab (including settings via the operation panel or a connected camera in Direct printing)
	Custom setting
Ink used	PigBK: PGI-5BK
	C: CLI-8C
	M: CLI-8M
	Y: CLI-8Y
	k: CLI-8BK
	c: CLI-8C (small droplet)
	m: CLI-8M (small droplet)
Print control	Bi: Bi-directional
	Uni: Uni-directional

3-1. Normal Color Printing via Computer

Paper type (Canon specialty paper)	Item	5 Fast	4	3	2	1 Fine
Plain paper	Print quality Resolution HxV(dpi) Print control Ink used	Custom PigBK:300x300 C/M/Y:600x600 1 pass, Bi PigBk/C/M/Y	Fast PigBK:300x300 C/M/Y:600x600 1 pass, Bi PigBk/C/M/Y	Standard PigBK/Y::600x600 C/M/k:1200x1200 1 pass, Bi PigBk/C/M/Y	High PigBK:600x600 C/M/Y/c/m/k:1200x1200 4 passes, Bi PigBk/C/M/Y	
Photo Paper Pro (PR-101)	Print quality Resolution HxV(dpi) Print control Ink used			Standard C/M/Y/c/m/k:1200x1200 4 passes, Bi C/M/Y/c/m/k	High C/M/Y/k:1200x1200 7 passes, Bi C/M/Y/k	Custom C/M/Y/c/m/k:9600x1200 16 passes, Bi C/M/Y/c/m/k
Photo Paper Plus Glossy Photo Paper Plus Semi-gloss (PP-101/SG-101)	Print quality Resolution HxV(dpi) Print control Ink used		Fast C/M/Y/c/m/k:1200x1200 3 passes, Bi C/M/Y/c/m/k	Standard C/M/Y/c/m/k:1200x1200 4 passes, Bi C/M/Y/c/m/k	High C/M/Y/c/m/k:1200x1200 7 passes, Bi C/M/Y/c/m/k	
Matte Photo Paper (MP-101)	Print quality Resolution HxV(dpi) Print control Ink used			Standard C/M/Y/c/m/k:1200x1200 5 passes, Bi C/M/Y/c/m/k	High C/M/Y/c/m/k:1200x1200 7 passes, Bi C/M/Y/c/m/k	
Glossy Photo Paper (GP-401/501)	Print quality Resolution HxV(dpi) Print control Ink used			Standard C/M/Y/c/m/k:1200x1200 5 passes, Bi C/M/Y/c/m/k	High C/M/Y/c/m/k:1200x1200 7 passes, Bi C/M/Y/c/m/k	
Photo Paper Plus Double Sided (PP-101D)	Print quality Resolution HxV(dpi) Print control Ink used			Standard C/M/Y/c/m/k:1200x1200 5 passes, Bi C/M/Y/c/m/k	High C/M/Y/c/m/k:1200x1200 7 passes, Bi C/M/Y/c/m/k	
High Resolution Paper (HR-101)	Print quality Resolution HxV(dpi) Print control Ink used			Standard C/M/Y/c/m/k:1200x1200 5 passes, Bi C/M/Y/c/m/k	High C/M/Y/c/m/k:1200x1200 7 passes, Bi C/M/Y/c/m/k	
Envelope	Print quality Resolution HxV(dpi) Print control Ink used			Standard PigBk/Y::600x600 C/M/k:1200x1200 2 passes, Bi PigBk/C/M/Y/k	High PigBk:600x600 C/M/Y/k:1200x1200 4 passes, Bi PigBk/C/M/Y/k	
T-shirt Transfer (TR-301)	Print quality Resolution HxV(dpi) Print control Ink used			High C/M/Y/k:1200x1200 7 passes, Bi C/M/Y/k		
Printable disk (recommended)	Print quality Resolution HxV(dpi) Print control Ink used		Fast C/M/Y/c/m/k:1200x1200 5 passes, Bi C/M/Y/c/m/k	Standard C/M/Y/c/m/k:1200x1200 7 passes, Bi C/M/Y/c/m/k	High C/M/Y/c/m/k:1200x1200 8 passes, Bi C/M/Y/c/m/k	
Printable disk (others)	Print quality Resolution HxV(dpi)		Fast C/M/Y/c/m/k:1200x1200	Standard C/M/Y/c/m/k:1200x1200	High C/M/Y/c/m/k:1200x1200	

	Print control Ink used		5 passes, Bi C/M/Y/c/m/k	7 passes, Bi C/M/Y/c/m/k	8 passes, Bi C/M/Y/c/m/k	
Other photo paper	Print quality Resolution HxV(dpi) Print control Ink used			Standard C/M/Y/c/m/k:1200x1200 8 passes, Bi C/M/Y/c/m/k		

3-2. Normal Grayscale Printing via Computer

Paper type (Canon specialty paper)	Item	5 Fast	4	3	2	1 Fine
Plain paper	Print quality Resolution HxV(dpi) Print control Ink used	Custom PigBK:300x300 1 pass, Bi PigBk	Fast PigBK:300x300 1 pass, Bi PigBk	Standard PigBK:600x600 1 pass, Bi PigBk	High PigBK:600x600 4 passes, Bi PigBk	
Envelope	Print quality Resolution HxV(dpi) Print control Ink used			Standard PigBK:600x600 2 passes, Uni PigBk	High PigBK:600x600 4 passes, Uni PigBk	

3-3. Borderless Printing via Computer

Paper type (Canon specialty paper)	Item	5 Fast	4	3	2	1 Fine
Plain paper	Print quality Resolution HxV(dpi) Print control Ink used			Standard Y:600x600, C/M/k:1200x1200 2 passes, Bi C/M/Y/k		
Photo Paper Pro (PR-101)	Print quality Resolution HxV(dpi) Print control Ink used			Standard C/M/Y/c/m/k:1200x1200 4 passes, Bi C/M/Y/c/m/k	High C/M/Y/k:1200x1200 7 passes, Bi C/M/Y/k	Custom C/M/Y/c/m/k:9600x1200 16 passes, Bi C/M/Y/c/m/k
Photo Paper Plus Glossy Photo Paper Plus Semi-gloss (PP-101/SG-101)	Print quality Resolution HxV(dpi) Print control Ink used		Fast C/M/Y/c/m/k:1200x1200 3 passes, Bi C/M/Y/c/m/k	Standard C/M/Y/c/m/k:1200x1200 4 passes, Bi C/M/Y/c/m/k	High C/M/Y/c/m/k:1200x1200 7 passes, Bi C/M/Y/c/m/k	
Matte Photo Paper (MP-101)	Print quality Resolution HxV(dpi) Print control Ink used			Standard C/M/Y/c/m/k:1200x1200 5 passes, Bi C/M/Y/c/m/k	High C/M/Y/c/m/k:1200x1200 7 passes, Bi C/M/Y/c/m/k	
Glossy Photo Paper (GP-401/501)	Print quality Resolution HxV(dpi) Print control Ink used			Standard C/M/Y/c/m/k:1200x1200 5 passes, Bi C/M/Y/c/m/k	High C/M/Y/c/m/k:1200x1200 7 passes, Bi C/M/Y/c/m/k	
Other photo paper	Print quality Resolution HxV(dpi) Print control Ink used			Standard C/M/Y/c/m/k:1200x1200 8 passes, Bi C/M/Y/c/m/k		

3-4. Duplex Printing via Computer

Paper type (Canon specialty paper)	Item	5 Fast	4	3	2	1 Fine
Plain paper	Print quality Resolution HxV(dpi) Print control Ink used	Custom PigBk:300x300, C/M/Y:600x600 1 pass, Bi PigBk/C/M/Y	Fast PigBk:300x300, C/M/Y:600x600 1 pass, Bi PigBk/C/M/Y	Standard PigBk/Y::600x600, C/M:1200x1200 1 pass, Bi PigBk/C/M/Y	High PigBk:600x600, C/M/Y:1200x1200 4 passes, Bi PigBk/C/M/Y	
Photo Paper Plus Double Sided (PP-101D)	Print quality Resolution HxV(dpi) Print control Ink used			Standard C/M/Y/c/m/k:1200x1200 5 passes, Bi C/M/Y/c/m/k	High C/M/Y/c/m/k:1200x1200 7 passes, Bi C/M/Y/c/m/k	

3-5. Camera Direct Printing

Paper type (Canon specialty paper)	Item	5 Fast	4	3	2	1 Fine	Camera Direct print mode
Plain paper*1 *1: Printed in Camera Direct print mode	Print quality Resolution HxV(dpi) Print control Ink used			Standard PigBK/Y::600x600 C/M/k:1200x1200 1 pass, Bi PigBK/C/M/Y/k	High PigBK:600x600 C/M/Y/c/m/k:1200x1200 4 passes, Bi PigBK/C/M/Y/c/m/k		
Photo Paper Pro (PR-101)	Print quality Resolution HxV(dpi) Print control Ink used			Camera Direct mode C/M/Y/c/m/k:1200x1200 4 passes, Bi C/M/Y/c/m/k	Camera Direct mode Y:600x600,C/M/k:1200x1200 7 passes, Bi C/M/Y/k		
Photo Paper Plus Glossy Photo Paper Plus Semi-gloss (PP-101/SG-101)	Print quality Resolution HxV(dpi) Print control Ink used			Camera Direct mode C/M/Y/c/m/k:1200x1200 4 passes, Bi C/M/Y/c/m/k	Camera Direct mode Y:600x600 C/M/k:1200x1200 7 passes, Bi C/M/Y/k		
Glossy Photo Paper (GP-401)	Print quality Resolution HxV(dpi) Print control Ink used			Camera Direct mode C/M/Y/c/m/k:1200x1200 5 passes, Bi C/M/Y/c/m/k	Camera Direct mode Y:600x600 C/M/k:1200x1200 7 passes, Bi C/M/Y/k		
Matte Photo Paper (MP-101)	Print quality Resolution HxV(dpi) Print control Ink used			Camera Direct mode C/M/Y/c/m/k:1200x1200 5 passes, Bi C/M/Y/c/m/k	Camera Direct mode Y:600x600 C/M/k:1200x1200 7 passes, Bi C/M/Y/k		
Printable disk	Print quality Resolution HxV(dpi) Print control Ink used		Other/Fast C/M/Y/c/m/k:1200x1200 5 passes, Bi C/M/Y/c/m/k	Recommended/Standard C/M/Y/c/m/k:1200x1200 7 passes, Bi C/M/Y/c/m/k			

3-6. Copying

Paper type (Canon specialty paper)	Item	5 Fast	4	3	2	1 Fine	Copy mode
Plain paper Single sided, B&W (borderless not supported)	Print quality Resolution HxV(dpi) Print control Ink used	Fast PigBK:300x300 1 pass, Bi PigBk		Standard PigBK:600x600 1 pass, Bi PigBk	High PigBK:600x600 4 passes, Bi PigBk		
Plain paper Single sided, Color (borderless not supported)	Print quality Resolution HxV(dpi) Print control Ink used	Fast PigBK:300x300 C/M/Y:600x600 1 pass, Bi PigBk/C/M/Y		Standard PigBK/Y::600x600 C/M/k:1200x1200 1 pass, Bi PigBk/C/M/Y/k	High PigBK:600x600 C/M/Y/c/m/k:1200x1200 4 passes, Bi PigBk/C/M/Y/c/m/k		
Glossy Photo Paper (GP-401/501) Single sided, B&W, Color	Print quality Resolution HxV(dpi) Print control Ink used			Copy mode C/M/Y/c/m/k:1200x1200 5 passes, Bi C/M/Y/c/m/k	Copy mode C/M/k:1200x1200 7 passes, Bi C/M/Y/k		
Photo Paper Pro (PR-101) Single sided, B&W, Color	Print quality Resolution HxV(dpi) Print control Ink used			Copy mode C/M/Y/c/m/k:1200x1200 4 passes, Bi C/M/Y/c/m/k	Copy mode C/M/k:1200x1200 7 passes, Bi C/M/Y/k		
Matte Photo Paper (MP-101) Single sided, B&W, Color	Print quality Resolution HxV(dpi) Print control Ink used			Copy mode C/M/Y/c/m/k:1200x1200 5 passes, Bi C/M/Y/c/m/k	Copy mode C/M/k:1200x1200 7 passes, Bi C/M/Y/k		
Photo Paper Plus Glossy (PP-101/SG-101) Single sided, B&W, Color	Print quality Resolution HxV(dpi) Print control Ink used			Copy mode C/M/Y/c/m/k:1200x1200 4 passes, Bi C/M/Y/c/m/k	Copy mode C/M/k:1200x1200 7 passes, Bi C/M/Y/k		
Printable disk (recommended) Single sided, B&W, Color	Print quality Resolution HxV(dpi) Print control Ink used				Standard C/M/Y/c/m/k:1200x1200 7 passes, Bi C/M/Y/c/m/k		
Printable disk (others) Single sided, B&W, Color	Print quality Resolution HxV(dpi) Print control Ink used			Fast C/M/Y/c/m/k:1200x1200 5 passes, Bi C/M/Y/c/m/k			
Plain paper Double sided, B&W, Color (borderless not supported)	Print quality Resolution HxV(dpi) Print control Ink used		Fast PigBK:300x300 C/M/Y:600x600 1 pass, Bi PigBk/C/M/Y	Standard PigBK/Y::600x600 C/M/k:1200x1200 1 pass, Bi PigBk/C/M/Y/k	High PigBK:600x600 C/M/Y/c/m/k:1200x1200 4 passes, Bi PigBk/C/M/Y/c/m/k		

<2-3. PRINT MODE>

4. FAQ (Problems Specific to the MP600 and Corrective Actions)

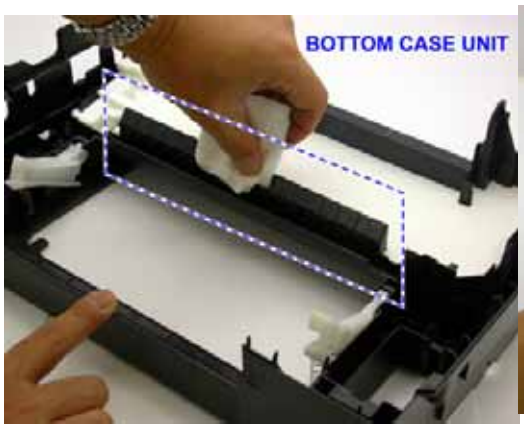
No.	*	Function	Phenomenon	Condition	Cause	Corrective action	Possible call or complaint
1	C	Paper feeding	Paper feeding problems - Jam - Skewed paper feeding	- Low temperature and low humidity environment - Paper feeding from the cassette - Round-trip postcard	Due to curl of a round-trip postcard in the low temperature and low humidity environment, the paper return tab of the U-turn path opposite to the home position may not completely return to the original position before the postcard is picked up. In this way, the postcard is skewed at the home position side, resulting in skewed paper feeding or jam.	- Eliminate the curl of the round-trip postcard. - Set the round-trip postcard in the ASF.	- Paper jams. - Paper feeds at an angle.
2	C	Print results	Skewed paper feeding (at the level of +/- 1%)	- Paper feeding from the ASF - Credit Card size	Since coaxial tolerance between the pinch roller and the LF roller, which determines the paper feed alignment, is 0.2mm, skewed paper feeding can occur. However, according to the field data of current models, the skewness level caused by the coaxial tolerance of 0.2mm is within the criteria of +/- 1%, thus the phenomenon is left as is.	- Align the paper guide to the paper edge tighter than usual.	- Paper feeds at an angle. - A margin appears on printouts.
3	A	Print results	Soiling on the back side of paper (lines or streaks parallel to the paper feed direction)	- After continuous borderless printing of small sized paper (such as 4 x 6), when a larger sized paper (such as A4) is printed. - With Photo Paper Plus Double Sided or postcards, the phenomenon is likely to be noticeable and to be complained of by users, as printing is performed on both sides of such paper.	In borderless printing, printing is performed to the size slightly larger than the paper size, and ink off the paper is absorbed by the platen's ink absorber. Absorbed ink may attach to the platen rib(s) after several dozen sheets are printed, causing soiling at the leading edge of paper or on the back side of paper.	1. Perform Bottom plate cleaning (from the MP driver) up to 3 times[*1]. 2. If soiling on the paper still remains after 3 times of Bottom plate cleaning, wipe the platen rib(s) and their surroundings with a cotton swab.	- Paper gets smeared. - The back side of paper gets smeared.
			Soiling on paper	- Automatic duplex	On the rib(s) inside	**Temporary**	- Paper gets

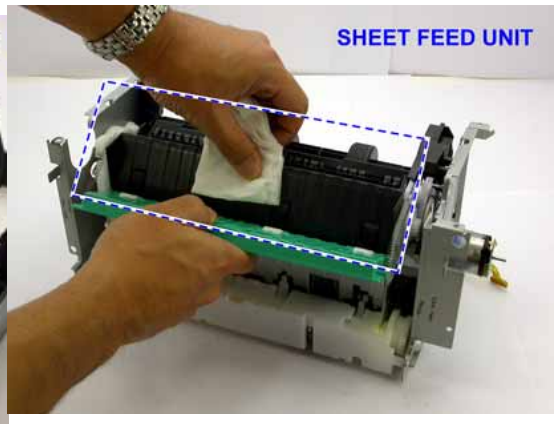
4	B	Print results	in automatic duplex printing (lines or streaks perpendicular to the paper feed direction)	printing (Photo Paper Plus Double Sided, postcards, plain paper)	the sheet feed unit used for duplex printing, ink mist may accumulate, smearing paper.	**operational solution:** Cancel automatic duplex printing, and manually print each side of paper. **Cleaning by user:** 1. Perform Bottom plate cleaning (from the MP driver) up to 3 times[*1]. 2. If soiling on the paper still remains after 3 times of Bottom plate cleaning, wipe the platen rib(s) and their surroundings with a cotton swab. If the phenomenon persists after conducting 1 and 2, servicing is required. **Service:** Wipe any soiling or dirt off from the sheet feed unit and the bottom case unit ribs[*2].	smeared. - The back side of paper gets smeared. - Even after Bottom plate cleaning was performed, and the platen ribs were cleaned with cotton swab, paper gets smeared.
5	C	Print results	Scratches on paper	- PP-101D, PP-101, PR-101, SG-101, etc. - Paper feeding from the cassette - Paper feeding from the ASF - Multiple number of sheets loaded	- Scratches on the PF return lever due to paper feeding from the cassette, and duplex printing path. - When multiple sheets of paper are set, the back side of paper being picked up scratches the front side of paper beneath (especially where the paper feed rollers contact when picking up the paper).	- Change the paper feeding method from the cassette to the auto sheet feeder. - If automatic duplex printing is performed, cancel it, and, by setting only a single sheet of paper in the auto sheet feeder, manually print each side of paper. - Set only a single sheet of paper in the auto sheet feeder.	- Paper is scratched. - Marks appear on printed paper.
6	C	Print results	Soiling on paper	The machine has been used for a long period of time with the ASF cover closed before printing is performed using the ASF.	Due to ink mist attached to the ASF sub-pick-up rollers. If printing is done from the cassette with the ASF cover closed, ink mist is kept inside the machine, attaching to the ASF sub-pick-up rollers.	Clean the ASF sub-rollers (see *3 for details).	

					Since the sub-rollers usually do not contact the paper, ink mist can easily accumulate, especially during printing on small-sized paper which never contacts the sub-rollers.		
7	B	Print results	Skewed paper feeding	- SG-101 - Paper feeding from the ASF - 10 sheets (max.) set in the ASF	When 10 sheets of paper are set in the ASF, and if they curl significantly, the curled portions of paper get over the cover guide, not being aligned along the guide properly.	- Straighten the paper. - Set 5 or less sheets of paper in the ASF.	- Paper feeds at an angle. - A margin appears on printouts.

*1: Change the paper in each Bottom plate cleaning. The cleaning can end when paper does not get any soiling.

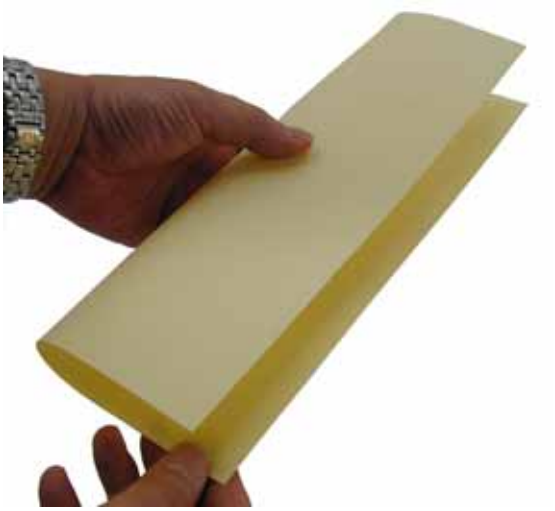
*2: Locations to clean in servicing when soiling on paper in automatic duplex printing persists:





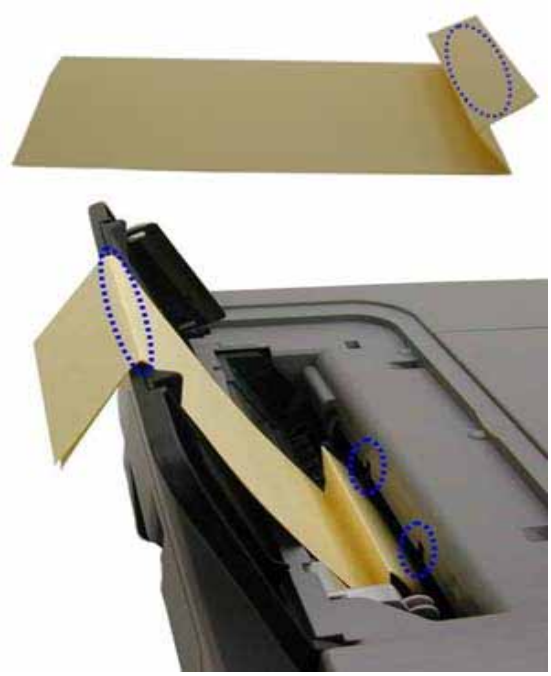
*3: How to make and set the ASF sub-roller cleaning sheet:

1) Fold a sheet of plain paper lengthwise in half.



2) Fold the paper at approx. 60 mm from the end, and fold the folded end in half backward, as shown below.

3) Moisten the folded end portion (indicated by the blue circle in the figure below) using a wipe, and set the paper in the ASF so that the moistened edge of the paper contacts the 2 sub-rollers. Then, fold the other end of the paper along the ASF cover edge to hook the paper to the ASF cover, as shown below.



4) On the machine, select **Settings**, **Maintenance**, then **Roller cleaning**. For details, see "Standalone machine operation."

* Occurrence level:

A: The symptom is likely to occur frequently. (Caution required)
B: The symptom may occur under certain conditions, but likeliness is assumed very low in practical usage.
C: The symptom is unlikely to be recognized by the user, and no practical issues are assumed.

<2-4. FAQ>

Part 3

APPENDIX

3. PIXMA MP600 SPECIFICATIONS

<Machine>

Type	Desktop serial color inkjet printer
Paper feeding method	Auto sheet feed (ASF, cassette, automatic duplex printing, CD / DVD printing*1)
Resolution	9,600 x 2,400dpi (Max.)
Throughput (target value)	4 x 6 photo (PP-101, standard, borderless)*: Approx. 28 sec. For reference: Custom 5 / Standard Black text (plain paper, FINE pattern): 30ppm / 14.8ppm Color (plain paper, FINE pattern): 24ppm / 11.6ppm * Based on Canon standard pattern. Print speed may vary depending on system configuration, interface, software, document complexity, print mode, page coverage, type of paper used and does not take into account data processing time on host computer. Note: Notations for the Americas should be confirmed with the related marketing section of each sales company in the Americas.
Printing direction	Bi-directional, uni-directional
Print width	Max. 203.2mm (216mm in borderless printing)
Interface	- Computer: USB 2.0 Hi-Speed, Bluetooth ver. 1.2 (optional) - Camera Direct: PictBridge with a PictBridge-supported digital camera and digital video camera - Mobile phone: IrDA 1.2, Bluetooth ver. 1.2 (optional), both for JPEG files only
ASF stacking capacity	Plain paper: Max. 13mm (Approx. 150 sheets of 64g/m^2 paper)
Cassette stacking capacity	Plain paper: Max. 13mm (Approx. 150 sheets of 64g/m^2 paper) (Photo Stickers and Credit Card size not supported)
Paper weight	64 to 105 g/m^2, Canon specialty paper 273 g/m^2 at the maximum
Detection functions	- Opening of scanning unit - Presence of print head / ink tanks - Opening / Closing of paper output tray - Opening / Closing of inner cover - Remaining ink amount (optical / dot count) - Ink tank position - Paper presence - Printing position - Paper end sensor - Ink amount in the ink absorber - Internal temperature - Pick-up roller - Paper feed roller position - Carriage position - Head-to-paper distance - Supported camera direct printing device - Presence of memory card - Scanner home position
Acoustic noise	Highest print quality settings: Approx. 33.5dB (Photo Paper Pro, Custom 1, paper feeding from the ASF)
	During operation — Temperature — 5C to 35C (41F to 95F)

Environmental requirements	Non operation	Humidity	10%RH to 90%RH (no condensation)
		Temperature	0C to 40C (32F to 104F)
		Humidity	5%RH to 95%RH (no condensation)

Power supply	Power supply voltage, frequency	Power consumption	Standby	Power-off
	AC 100 to 240V, 50/60Hz	Approx. 17W (max.)	Approx. 1.5W	Approx. 0.8W

External dimensions	- With the trays retracted: Approx. 450 (W) x 389 (D) x 194 (H)mm - With the trays extended: Approx. 450 (W) x 593 (D) x 337 (H)mm
Weight	Approx. 10.1kg, including print head and ink tanks, excluding optional units
Related standards (Machine, Adapter)	Electromagnetic radiance: VCCI, FCC, IC, CE Mark, Taiwan EMC, C-Tick, CCC (EMC), Korea MIC, Gost-R Electrical safety: Electrical Appliance and Material Safety Law (DENAN), UL, C-UL, CB Report, CE Mark, GS, Gost-R, FT, SASO, CCC (Safety), SPRING, Korea EK, IRAM (Argentine) Environmental regulations: RoHS (EU), WEEE (EU), Korea Package Recycle Law, Green Point (Germany), Energy Star, Eco Mark, Law on Promoting Green Purchasing
Serial number location	On the carriage flexible cable holder (visible when the scanning unit is opened)
Remaining ink amount detection	Available (detection by optical method and dot count, enabled at default)
Paper type detection	Not available
Print head alignment	Available (automatic or manual alignment via the MP driver Maintenance tab, or via the machine button in Direct Printing, automatic alignment at default)

<Scanner>

Type	Flat bed scanner (scanning of a fixed document by a moving scanner head)
Sensor type	CIS (Contact Image Sensor)
Optical resolution	2,400 x 4,800 dpi (max.)
Scanning resolution (software interpolation)	19,200 x 19,200 dpi (max.)
Gradation (input / output)	Grayscale: 16 bit / 8 bit Color: 48 bit / 24 bit (RGB each color 16 bit / 8 bit)
Document size	A4 / Letter (max.)

<Copy>

Copy quality	3 levels (Fast, Standard, High)
Intensity	9 levels
Enlargement / reduction ratio	25 to 400%
Copy speed	Color document: Approx. 30 sec. For reference: Black text (CPM) 30cpm Color (CPM) 24cpm Note: - Document copy speed is based on copying the manuscript "ISO/IEC FCD24712: Newsletter" (digital data printed by offset) using default settings on plain paper. Bk text/Color(CPM) are based on "fast mode" setting using Canon standard pattern on plain paper. Copy speed may vary depending on document complexity, copy mode, page coverage, type of paper used, etc. and does not take into account warming up time.

	- Notations for the Americas should be confirmed with the related marketing section of each sales company in the Americas.
Document size	A4 / Letter (max.)
Enlargement / reduction	Preset ratio: max. (400%), 4x6 -> LTR (183%) 5x7 -> LTR (156%) A5 -> A4 (141%) B5 -> A4 (115%) A4 -> LTR (94%) A4 -> B5 (86%) A4 -> A5 (70%) min. (25%) Zoom: 25 to 400% (in increments of 1%)
Number of continuous copies	Monochrome / color: 1 to 99 copies

<Direct printing>

Memory card drive	**Supported memory card**	- Compact Flash TYPE I/II (3.3V) - Microdrive - SmartMedia Card (3.3V only) - Memory Stick, Memory Stick PRO - SD card - MultiMedia Card (ver. 3.31), RS-MMC (ver. 3.31) - sD-Picture Card* - miniSD card* - Memory Stick Duo*, Memory Stick PRO Duo* * Adapter required
Storage function	**Operation**	Via the machine buttons.
	Condition	Before changing the settings, the memory card must be removed.
	Function	Read / Write
	Operation panel	2.5 color TFT LCD, 17 buttons, 4 LEDs
	File format	JPEG (DCF, CIFF, Exif 2.2 or prior, JFIF), DPOF compliant
	Supported paper	See 4. PRINT MEDIA SPECIFICATIONS.
	Print quality	Standard, High
	Image correction function	Photo Optimizer PRO, VIVID, Noise reduction, Face brightener, Image optimizer, Red eye correction
	Image adjustment function	Brightness, contrast, color hue (skin tones)
	Image processing function	Not available
	Image retrieval function	Available (date)
	DPOF	- Ver. 1.00 compliant standard printing - Multiple printing - Index printing - Printing of an image the specified number of copies - Printing of the specified image(s) - Printing with the shooting date
		Single-photo/multi-photo/all-photo printing:

Card Direct printing	**Print layout**	1 photo per page (bordered/borderless, only with borders for plain paper)
		Index printing: A4/Letter: 80 photos per page 4" x 6": 15 photos per page 5" x 7": 35 photos per page Credit Card size: 6 photos per page 8" x 10": 72 photos per page Wide size: 28 photos per page
		Layout printing: 2, 4, 8 photos per page (bordered/borderless) Half (bordered/borderless, with/without lines) Album (4 photos per page, right/left) Mix 1/2/3 (for A4/LTR)
		Sticker printing: 16 stickers
	Information print	Date, file number
	Throughput	Approx. 43 sec. (4" x 6" borderless) Note: - When printing a 6 megapixel image taken by certain Canon digital camera from a memory card on default settings using Photo Paper Plus Glossy without border. Actual print speed may vary depending on image data, print mode, type of paper and type of memory card used. - Notations for the Americas should be confirmed with the related marketing section of each sales company in the Americas.
Camera Direct printing	**Supported digital cameras**	Digital cameras and digital video cameras supporting PictBridge
	Supported paper	See 4. PRINT MEDIA SPECIFICATIONS.
	Print layout	- 1 photo per page (bordered/borderless) - 16 photos per page for Photo Stickers
	Information print	Date, file number
	Throughput	Approx. 44 sec. (PP-101 4x6, borderless, standard print quality) Note: - When printing a 6 megapixel image taken by certain Canon digital camera from PictBridge on default settings using Photo Paper Plus Glossy without border. Actual print speed may vary depending on image data, print mode, type of paper used and device that the printer is connected to. - Notations for the Americas should be confirmed with the related marketing section of each sales company in the Americas.
Print Beam printing	**Supported mobile phone**	Mobile phone equipped with IrDA 1.2 port, or with Bluetooth 1.2 port (when the optional unit is attached to the machine)
	Printable data	Image (JPEG only, text printing not possible)
	Supported paper	See 4. PRINT MEDIA SPECIFICATIONS.
	Print layout	- A4/Letter: 1, 2, 4, 8 frames per page, bordered/borderless Mixed 1/2/3 - Photo Stickers: 16 frames per page, bordered - Other paper: 1, 2, 4, 8 frames per page, bordered/borderless
	Standard	Bluetooth version 1.2
	Power	Bluetooth Power Class 2
		Good for approx. 10 m in radius (depending on interference between the communication

Printing via Bluetooth communication (optional)	**Communication range**	devices, or radio wave conditions)
	Used frequency band	2.4GHz
	Communication speed	Approx. 720kbps
	Supported profile	BIP, OPP, SPP, HCRP
	Supported OS for HCRP	- Windows XP Service Pack 2 or later - Windows XP Service Pack 1 or later: Microsoft "Support for Bluetooth Wireless Devices" or Toshiba Bluetooth Stack for Windows Ver. 3.00.10 or later has to be installed - Mac OS X v 10.3.3 or later
Bluetooth unit	**External dimensions**	18.5 (W) x 47.5 (D) x 8.7 (H)mm, cap attached
	Weight	Approx. 7g
	Power supply voltage	4.4 to 5.25V
	Power consumption	500mW (max.)
	Operating temperature	5C to 35C (41F to 95F)
	Operating humidity	10%RH to 90%RH (no condensation)

<Print head>

Type	Single head with 5 removable ink tanks (each color)
Print head	Pigment-based BK: 512 nozzles, 600 dpi, 30 pl Dye-based BK / C / M / Y: 512 x 6 nozzles, 1,200 dpi, 1 pl / 5 pl (C / M), 5 pl (BK / Y) (Two 512 nozzles for C and M respectively)
Ink color	Pigment-based black Dye-based black, cyan, magenta, yellow
Ink tank	Japan: BCI-9BK (pigment-based), BCI-7eBK / C / M / Y (dye-based) Others: PGI-5BK (pigment-based), CLI-8BK / C / M / Y (dye-based)
Weight (Net)	Print head, approx. 60g
Supply method	As a service part (not including ink tanks)
Part number	QY6-0061-000

<Ink tanks>

Model name and destination		Pigment-based ink		Dye-based ink							
		PGI-9BK	BCI-5BK	BCI-7BK	BCI-7eC	BCI-7eM	BCI-7eY	CLI-8BK	CLI-8C	CLI-8M	CKI-8Y
PIXUS MP600	Japan	O	X	O	O	O	O	X	X	X	X
PIXMA MP600	Others	X	O	X	X	X	X	O	O	O	O

O: Usable

X: Not usable

Note: The ink tanks for the Japanese model are not compatible with those for the other models. Be sure to use the appropriate ink tanks in servicing.

4. PRINT MEDIA SPECIFICATIONS

<Plain paper / Specialty paper>

The following types of paper are recommended:

Type	Name	Size	Paper feeding method (auto)	ASF stacking capacity (max.)	Camera Direct Printing	Card Direct Printing	Print Beam Printing
Plain paper	64 to 105 g/m^2	A4, LTR, A5, LGL*1 , custom	ASF, Cassette	13 mm	Yes*2	Yes	Yes
Super White Paper	SW-101/201	A4, LTR	ASF, Cassette	13 mm			
High Resolution Paper	HR-101	A4, LTR	ASF, Cassette	Approx. 80 sheets			
Glossy Photo Paper	GP-401	A4, LTR	ASF, Cassette	10 sheets	Yes	Yes	Yes
	GP-401 4x6	101.6 x 152.4 mm	ASF, Cassette	20 sheets	Yes	Yes	Yes
	GP-401 Credit Card	54 x 86 mm	ASF	20 sheets	Yes	Yes	
	GP-501	A4, LTR	ASF, Cassette	10 sheets	Yes	Yes	Yes
	GP-501 4x6	101.6 x 152.4 mm	ASF, Cassette	20 sheets	Yes	Yes	Yes
Photo Paper Pro	PR-101	A4, LTR	ASF, Cassette	10 sheets	Yes	Yes	Yes
	PR-101 4x6	101.6 x 152.4 mm	ASF, Cassette	20 sheets	Yes	Yes	Yes
	PR-101 8x10	203 x 254 mm	ASF, Cassette	10 sheets	Yes	Yes	Yes
	PR-101 Wide	101.6 x 180.6 mm	ASF, Cassette	20 sheets	Yes	Yes	Yes
Photo Paper Plus Glossy	PP-101	A4, LTR	ASF, Cassette	10 sheets	Yes		
	PP-101 4x6	101.6 x 152.4 mm	ASF, Cassette	20 sheets	Yes		
	PP-101 5x7	127 x 178 mm	ASF, Cassette	10 sheets	Yes		
Matte Photo Paper	MP-101	A4, LTR	ASF, Cassette	10 sheets		Yes	Yes
	MP-101 4x6	101.6 x 152.4 mm	ASF, Cassette	20 sheets		Yes	Yes
Photo Paper Plus Semi-gloss	SG-201	A4, LTR	ASF, Cassette	10 sheets	Yes		
	SG-201 4x6	101.6 x 152.4 mm	ASF, Cassette	20 sheets	Yes		
	SG-201 8x10	203 x 254mm	ASF, Cassette	10 sheets	Yes		
Photo Paper Plus Double Sided	PP-101D	A4, LTR	ASF, Cassette	10 sheets			
	PP-101D 5x7	127 x 178 mm	ASF, Cassette	10 sheets			
T-shirt transfer	TR-301	A4	ASF, Cassette	1 sheet			
Photo Stickers	PS-101	148 x 100mm	ASF	1 sheet	Yes*3	Yes	Yes
Envelope	COM #10	241 x 105 mm	ASF / Cassette	10 / 5 envelopes			
	DL-size	220 x 110 mm	ASF / Cassette	10 / 5 envelopes			

*1: ASF only for LGL

*2: When A4 or LTR is selected for Paper Size, plain paper is selectable for Paper Type.

*3: When printing on Photo Stickers, DO NOT select borderless printing.